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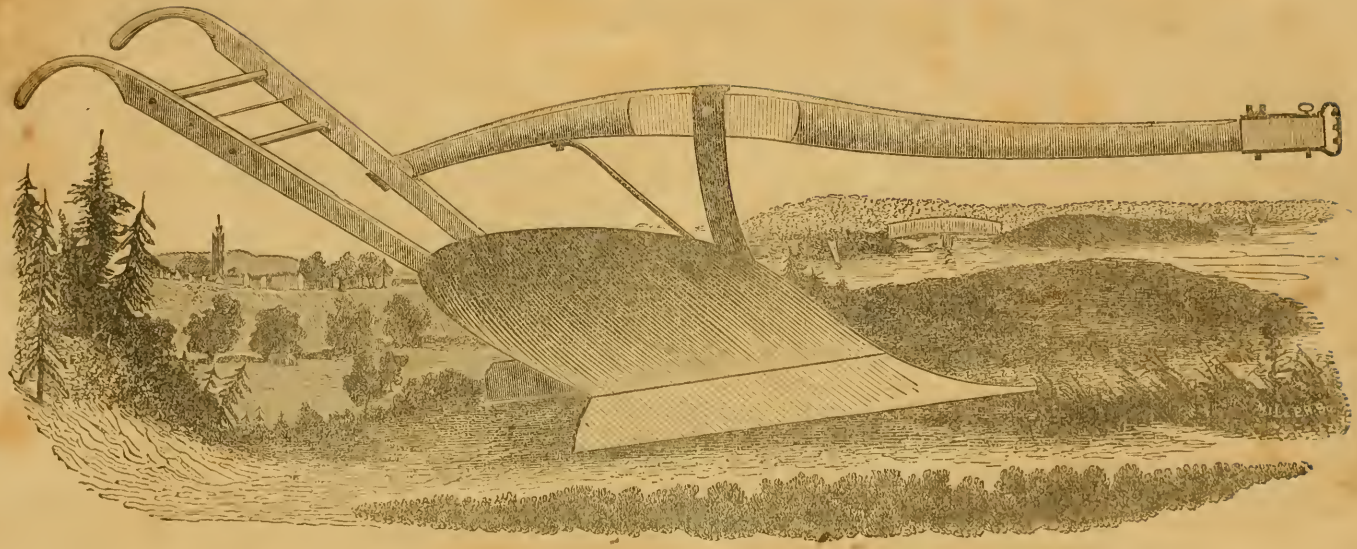

MAY'S IMPROVED PATENT STEEL PLOW—Manufactured at Janesville, Wis.

This Plow was exhibited at the Wisconsin State Fair, in October, 1851. Upon trial, (at the Plowing Match,) it received the Society's First Premium.

Engraved and printed by Mark Miller, Janesville.

TRANSACTIONS

OF THE

WISCONSIN STATE AGRICULTURAL SOCIETY,

WITH AN ABSTRACT

OF THE

CORRESPONDENCE OF THE SECRETARY.

VOLUME I.—1851.

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ADVERTISEMENT.

The Report of the Transactions of the Wisconsin State Agricultural Society for the Year 1851, together with the Abstract of the Correspondence of the Secretary for the same time, will, it is believed, be deemed of interest and value by the Citizens of this State generally.

As the furnishing of the several Papers enclosed has been entirely gratuitous, and as the Society has received no pecuniary aid from any source aside from its own members, it is hoped that its efforts to advance the great fundamental interest of the State will be met with that kindness and appreciation which it so justly demands.

The interest which has been so generally manifested in the labors of the Society, during its first year of existence, will, it is presumed, induce a careful examination of the present volume; and should it be found useful, in the advancement of Agricultural improvement, the wishes of the Executive Committee will be fully met.

To those gentlemen who have so kindly responded to the calls made upon them, the thanks of the Society are most cordially tendered.

ALBERT C. INGHAM.

STATE AGRICULTURAL ROOMS,
MADISON, January 1852.

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OFFICERS

OF

THE WISCONSIN STATE AGRICULTURAL SOCIETY

FOR 1851.

PRESIDENT.

ERASTUS W. DRURY, Fond du Lac.

VICE PRESIDENTS.

HENRY M. BILLINGS, Highland. ROSWELL C. OTIS, Kenosha.
WILLIAM F. TOMPKINS, Janesville.

RECORDING SECRETARY.

ALBERT C. INGHAM, Madison.

CORRESPONDING SECRETARY.

ROYAL BUCK, Madison.

TREASURER.

CHAUNCEY ABBOTT, Madison.

ADDITIONAL MEMBERS OF THE EXECUTIVE COMMITTEE.

HENRY JOHNSON, Kenosha. ADAM E. RAY, Troy.
ANDREW PALMER, Janesville. JOHN H. ROUNTREE, Platteville.
TIMOTHY BURNS, La Crosse.

Annual Meeting.—On the third Wednesday of January in each Year.

LIFE MEMBERS, BY THE PAYMENT OF TEN DOLLARS.

MARTIN WEBSTER, Fox Lake.
BENJAMIN FERGUSON, Fox Lake.
ERASTUS W. DRURY, Fond du Lac.
ERASTUS FAIRBANKS, St. Johnsbury, Vt.
LEONARD J. FARWELL, Madison.

CONSTITUTION

OF THE

WISCONSIN STATE AGRICULTURAL SOCIETY.

ARTICLE I.—OF THE NAME AND STYLE OF THE SOCIETY.

The Style of this Society shall be the "WISCONSIN STATE AGRICULTURAL SOCIETY." Its objects shall be to promote and improve the condition of Agriculture, Horticulture, and the Mechanical, Manufacturing, and Household Arts.

ARTICLE II.—OF THE MEMBERS.

The Society shall consist of such Citizens of this, and other States, as shall signify in writing their wish to become Members, and shall pay on subscribing not less than one dollar, and annually thereafter one dollar; and also of Honorary and Corresponding Members.

The Presidents of County Agricultural Societies, or a delegate from each, shall *ex officio* be Members of this Society. The payment of ten dollars, or more, at one time, shall constitute a Member for life, and shall exempt the donor from annual contribution.

ARTICLE III.—OF THE OFFICERS.

The Officers of the Society shall consist of a President, three Vice Presidents, (one to be located in each congressional district), a Recording Secretary, a Corresponding Secretary, a Treasurer, an Executive Committee to consist of the Officers above named and five additional Members, a majority of whom shall constitute a quorum, and a General Committee, to consist of one Member from each county, organized for judicial purposes.

ARTICLE IV.—OF THE DUTIES OF THE OFFICERS.

The Recording Secretary shall keep the Minutes and have charge of the Books of the Society.

The Corresponding Secretary shall carry on the correspondence with other Societies, with Individuals, and with the General Committee, in furtherance of the objects of the Society.

The Treasurer shall keep the funds of the Society, and disburse the same on the order of the President, or a Vice President, countersigned by the Recording Secretary, and shall make a report of the receipts and expenditures at the annual meeting in January.

The Executive Committee shall take charge of, and distribute or preserve all Seeds, Plants, Books, Models, &c. which may be transmitted to the Society; and shall have also the charge of all communications designed or calculated for publication, and so far as they may deem expedient shall collate, arrange, and publish the same, in such manner and form as they shall deem best calculated to promote the objects of the Society.

The General Committee are charged with the interests of the Society in the counties in which they shall respectively reside, and will constitute a medium of communication between the Executive Committee and the remote members of the Society.

ARTICLE V.—OF MEETINGS AND ELECTIONS.

There shall be an annual meeting of the Society on the third Wednesday of January in each year, in the Village of Madison, at which time all the Officers shall be elected by a plurality of votes, with the exception of the General Committee, who may be appointed by the Executive Committee, who shall also have power to fill any vacancies which may occur in the Officers of the Society during the year.

Extra meetings may be convoked by the Executive Committee. Fifteen members shall be a quorum for the transaction of business.

ARTICLE VI.—OF THE ANNUAL CATTLE SHOW AND FAIR.

The Society shall hold an Annual Cattle Show and Fair at such time and place as shall be designated by the Executive Committee who shall prepare a Premium List, appoint Viewing Committees, and award the Premiums at the same. It shall be the duty of all the Officers to attend the Annual Cattle Show and Fair.

ARTICLE VII.—OF AMENDMENTS.

This Constitution may be amended by a vote of two-thirds of the members attending any annual meeting.

STATE AGRICULTURAL ROOMS,
Madison, January 22d, 1852.

I certify that the above and foregoing is a true and correct copy of the Constitution of the Wisconsin State Agricultural Society.

ALBERT C. INGHAM,
Corresponding Secretary.

DONATIONS, 1851.

B. P. Johnson, Esq. Secretary. Transactions of the New York State Agricultural Society from 1842 to 1850 inclusive, 9 volumes.

Joseph N. Saunderson, Esq. Lynn, Mass. Transactions of the Essex County Agricultural Society for 1850.

TRANSACTIONS.

TRANSACTIONS

OF THE

WISCONSIN STATE AGRICULTURAL SOCIETY.

ORGANIZATION.

PRELIMINARY MEETING.

Pursuant to previous and public notice, the Members of the Legislature, and the Citizens of the State of Wisconsin generally, met in the Assembly Hall, at the Capitol, in the Village of Madison, on the evening of Saturday, March 8th, A. D. 1851, for the purpose of taking into consideration, the expediency of forming a State Agricultural Society for the State of Wisconsin.

On motion of Hon. Henry Johnson, of Kenosha, Hon. Wm. F. Tompkins, of Rock, was called to the Chair; and on motion of Erastus W. Drury, Esq. of Fond du Lac, Albert C. Ingham, Esq. of Dane, was appointed Secretary.

The objects of the meeting having been explained by the Chairman, the Hon. Henry Johnson offered the following Resolution, to wit:

Resolved: That it is expedient to form a State Agricultural Society for the State of Wisconsin at the present time.

After a full and free discussion, and the mutual interchange of views on the part of several gentlemen present, the Resolution was unanimously adopted.

On motion of Hon. Adam E. Ray, of Walworth:

Resolved: That a Committee of seven be appointed by the Chair to report a Constitution and By-Laws for the permanent government of the State Agri-

cultural Society of the State of Wisconsin; and that they also present the names of persons suitable to fill the various offices of the said Society.

The Chairman appointed as such Committee, Messrs. HENRY JOHNSON, of Kenosha; ADAM E. RAY, of Walworth; ERASTUS W. DRURY, of Fond du Lac; TIMOTHY BURNS, of La Crosse; CHAUNCEY ABBOTT, ABRAM OGDEN, and ROYAL BUCK, of Dane.

On motion of ERASTUS W. DRURY, Esq., the meeting adjourned to meet at the same place, on Wednesday, March 12th, 1851, at seven o'clock P. M.

WILLIAM F. TOMPKINS,
Chairman.

ALBERT C. INGHAM,
Secretary.

WEDNESDAY, MARCH 12TH, 1851.

Pursuant to adjournment the Meeting was called to order. The Chair being taken by Hon. WILLIAM F. TOMPKINS, Chairman of the last meeting.

The minutes of the last Meeting having been read and approved, Hon. HENRY JOHNSON, from the Committee previously appointed on that subject, reported the following Constitution, which being read was taken up, article by article, and adopted.—(See Constitution page 1.)

The Committee further reported the names of individuals suitable to fill the various Offices of the Society, whereupon they were severally unanimously elected, as follows:

President.

ERASTUS W. DRURY, Esq. of Fond du Lac.

Vice-Presidents.

First Congressional District, ROSWELL C. OTIS, Esq. of Kenosha.
Second " " Hon. HENRY M. BILLINGS, of Iowa.
Third " " Hon. WILLIAM F. TOMPKINS, of Rock.

Recording Secretary—ALBERT C. INGHAM, Esq. of Dane.
Corresponding Secretary—ROYAL BUCK, Esq. of Dane.
Treasurer—Hon. CHAUNCEY ABBOTT, of Dane.

Additional Members of the Executive Committee.

Hon. HENRY JOHNSON, of Kenosha. Hon. ANDREW PALMER, of Rock.
Hon. ADAM E. RAY, of Walworth. Hon. JOHN H. ROUNTREE, of Grant.
Hon. TIMOTHY BURNS, of La Crosse.

Hon. HENRY JOHNSON offered the following Resolutions, which were unanimously adopted, to wit:

RESOLVED: That the Secretary be authorized to procure the necessary Books and Stationery for the use of the Secretary and Treasurer; and also to procure the necessary Blank Certificates of Membership for the use of the Society; and that he draw his Warrant on the Treasurer for the necessary funds to defray the expense of the same.

RESOLVED: That the proceedings of this meeting be signed by the President and Secretary, and published in the several newspapers printed in Madison; and that the editors of the various newspapers of this State be requested to copy the same. The Society then adjourned.

WILLIAM F. TOMPKINS,
Chairman.

ALBERT C. INGHAM,
Secretary.

REPORT

OF THE EXECUTIVE COMMITTEE FOR 1851.

TO THE WISCONSIN STATE AGRICULTURAL SOCIETY:

The Members of the Executive Committee, in returning the trust which was confided to them at the formation of the Society in the month of March last, would respectfully Report:

That soon after their appointment, a meeting of the Committee was held at the Capitol, in the Village of Madison, at which time, after a free and full interchange of opinion among the members present, it was determined that the attempt be made to hold the first of the Annual Cattle Shows and Fairs of the Society without delay. In accordance with this action, the Village of Janesville was selected as the place, and Wednesday and Thursday, the first and second days of October, designated as the time for the commencement of this Anniversary. At this time the Society was without any funds whatever, and the result was, of consequence, looked forward to by the Committee with deep solicitude.

At a subsequent meeting of the Committee a Premium List was prepared and published, but there being still no funds the amount to be awarded was not given. At the same meeting the Executive Committee desiring that some more successful measure should be undertaken than had as yet been adopted to fill the treasury of the Society, in view of the exigency of the case, directed the Recording Secretary to visit, so far as the time previous to the Fair would allow, the various Counties of the State, and endeavor, by all suitable means, to excite an interest in the objects of the Society and to obtain Members thereto. The wisdom of this policy was rendered clear and apparent at the late State Fair, and too much credit cannot be given to the Secretary for the able and efficient service rendered by him in the discharge of this duty. To him the Society is mainly indebted for the success, so great and so unexpected, which attended that Fair.

During its progress, the time of each Member of the Committee was so engrossed by the multifarious duties devolving upon them, that they were unable to devote that time and attention to the observation of the ground that would be required in order to enable them to present a correct view of the occasion. They have therefore adopted the following account prepared by that able and distinguished friend and co-laborer with the Society, General Rufus King, of Milwaukee.

WISCONSIN STATE FAIR.—FIRST DAY.

Janesville, October 1st, 1851.

The First State Fair held in Wisconsin commenced here this morning. The beginning is an auspicious one, and when it is remembered how young our State is, it reflects great credit upon the enterprize and intelligence of her Farmers. An area of something over six acres, on the edge of the plateau which looks down upon the rapid and silvery Rock, and enclosed by a high board fence, constitutes the Fair ground. Along two sides of the enclosure are pens for Sheep and Swine, and stands for Cattle. Near the centre is a large and lofty Tent, for the display of Fruits, Flowers, Fancy Articles, Paintings, Jewelry, &c. Hard by is a long shed for the exhibition of Agricultural and Mechanical Products. In the open space between these centre pieces and the Cattle stands on the sides, there is ample room for the exhibition and trial of all sorts of Agricultural Implements, as well as for the display of Single and Matched Horses.

Such is the general arrangement of the grounds. The *filling-in* process commenced at eight o'clock this morning, and by noon the ground was very well occupied. Visitors began to flock in about ten, and from that hour until three P. M. there was quite a steady rush Fair-wards. I should think that there were *five*

thousand persons within the enclosure at half-past three P. M., when the crowd seemed to me to be the largest. The display was such as to surprise many and delight all.

The first point of attraction, especially for the Ladies, was the Central Tent. The articles for exhibition there were ranged along the sides, and made a very handsome show. On the right hand side, as you entered, the first object of attraction was a case of Fruit from Beecher's Nursery, Milwaukee, containing *thirty* different varieties (some very fine) of Apples, and three of Pears. Near by these, was a case of Jewelry, from A. B. Van Cott, of Racine, very rich and tasteful. Another one adjoining, from S. Gardiner, Jr., of Milwaukee, contained very handsome samples of his large Stock, and attracted crowds of admirers. Some samples of Wire Screenery, for Flouring and Fanning Mills, manufactured by S. S. Daggett, of Milwaukee, of all sizes and excellent quality, were very much noticed. Around the centre post of the Tent were hung a few of Stamm and Upmann's best Daguereotypes. They were much admired, as well for the workmanship, as for the likenesses.

On the left side of the Tent, the display was still finer. Some Paintings of Flowers and Fruits (one very clever one in particular by Miss Goodrich, of Milton,) introduced you to a remarkably promising collection of the Flowers and Fruits themselves. A magnificent Floral Ornament, oval-shaped, with a deep edge of fir, and a filling-in of Dahlias, Roses, Pinks, and a profusion of other Flowers, was the object of universal comment and admiration. It came from the Nursery of Charles Gifford, Spring street, Milwaukee, and found here no competitors. Mr. S. P. Beecher, besides his Fruit, had a very handsome show of Flowers, tastefully arranged by some fair hands. Mr. George O. Tiffany, of Milwaukee, furnished specimens of Peaches which were unequalled; and there were Apples from the Gardens of Mr. Harrison Ludington and Mr. Cyrus Hawley, of Milwaukee, Mr. William Sacia, of Concord, Jefferson County, and Mr. Geo. A. Styles, of Beloit, which were greatly admired for their size and color. A box of Apples, Plums, Grapes, and Pears, from S. M. Perkins, Burlington, Racine County, are entitled to special mention. They were very beautiful.

Milwaukee showed handsomely in the Printing department. The only articles furnished for exhibition in this class came from our city, but they were highly commended on all sides. From the Commercial Office, there was a large and handsome glass case, containing some fifteen different Cards, large and small, executed in Mr. Rounds' neatest style. The Wisconsin Office sent its Sample Book, filled with all varieties of Cards—many of them very handsome. Starr's Job Office was represented by two large Cards, worked in gold on purple ground, and hung in gilt frames—they were much admired. The Sentinel Office had

four large and very handsome Cards, in gilt frames with plate glass, and a number of neat samples of Book, Pamphlet, and other Printing. Of Book-binding, and Blank Books, there were two fine samples; one from CHARLES WEED, Madison, and the other from ROOD & WHITTEMORE, Milwaukee. There were many other articles in the central Tent worthy of notice which I must pass by for the present.

In the Mechanical Department the show was small. The most noticeable articles were handsome sets of Single and Double Harness, from GEO. DYER, Milwaukee; Copper Coffee Urns, with Lamps, from H. K. EGERTON & Co., Milwaukee; and some samples of Hardware, from H. J. NAZRO & Co., Milwaukee. Crane's Patent Soap, manufactured by E. D. LADD, of Milwaukee, and found, upon trial, to be a first-rate article, was the object of much attention from the Ladies. In the same neighborhood, was a handsome display of Cheese and Butter, small in quantity, but excellent in quality. The largest and apparently the finest of the Cheeses came from the Farm of SAMUEL A. THURSTON, Burlington, Racine County.

In the same shed were displayed the Agricultural products. The show of these, as yet, is small, but the quality superior. There are samples of Winter Wheat, raised in this County, which would be hard to beat anywhere, and a Squash from Dane County weighing two hundred pounds. I saw, too, some handsome Sweet Potatoes and superb Broom Corn, grown on the fertile soil of old Rock. A barrel of superfine Family Flour, from JACKMAN & SMITH's Mills, Janesville, looks fair to win the premium to-morrow. It is, indisputably, first rate.

But I must hurry on with this hasty sketch.—Within the enclosure, and in the open field, there is a very fine display of Stock and Agricultural Implements. The show of Cattle, Horses, and Sheep, is particularly fine, and has struck all with agreeable surprise.. I saw and admired the famous Paular Merino Bucks of Mr. E. W. DRURY, President of the Society, which shear from twelve to fourteen pounds annually, of a wool worth sixty cents per pound. They are full-blooded and of an approved stock—some of the very same Bucks having sold in Vermont this year for $200 and $300! There were others almost as fine on the ground from other parts of the State.

Among the Agricultural Implements, there was contributed a very fine assortment from THOMPSON LITTELL's Agricultural Warehouse in Milwaukee. They were manufactured by Ruggles, Nourse, Mason & Co., of Worcester, Mass.

Of the Cattle, I shall have something to say to-morrow. JANESVILLE is already filled to overflowing, and private hospitality is abundantly taxed to provide for the throng of visitors. An addition to the crowd is expected to-morrow.

SECOND DAY.

Janesville, October 2d, 1851.

The second day of our First State Fair opened delightfully this morning, agreeably disappointing many who, from the soughing wind and gathering clouds last night, anticipated a rain storm. What rain fell during the night was just sufficient to lay the dust, and the fresh westerly breeze soon cleared the sky of every cloud. The meeting of the State Society in the Court House last evening, was fully attended, and the discussions on various matters of business quite animated. The Committees, to examine and award the Premiums, were appointed, and the hour of ten this morning fixed for the commencement of their labors.

The first event of the day was the Ploughing Match. This came off in a level field, a quarter of a mile east of the Fair Grounds. There were ten entries, two with Oxen, and the rest with Horses. The ground was divided into quarter-acre sections, and one allotted to each competitor. The start was made at nine o'clock, and in just *twenty-six* minutes Mr. J. Milton May, of Janesville, completed the task, coming out a-head of the lot. It was adjudged, however, that the *best work* was done by Alexander & Ainslie, of Rock County, and the first premium awarded to them; Mr. May receiving the second. A pair of working Oxen, owned by Mr. Jackman, of Janesville, excited a good deal of admiration by the rapid manner in which they got over the ground during the Ploughing Match.

As soon as this matter was settled, the Viewing Committees went to work to examine the various entries. In many of the departments, where the entries were few, the duty was soon discharged; but in others, where the competitors were numerous and the merits of the different articles exhibited almost equal, the whole morning was consumed in the task. From twelve to one the Committees were busily employed in making out their reports, and after a hurried repast all flocked to the Fair Grounds to hear the Address of Chancellor Lathrop. This was delivered in the Floral Tent, which was crowded to suffocation, and made but an indifferent speaking-room. In spite of this drawback, and the further disadvantage of an annoying hoarseness, the Chancellor continued to keep his audience—closely packed, and standing as they were—earnest, attentive and deeply interested, from the commencement to the close of his Address. I will not attempt any sketch of this admirable discourse, since it is soon to be published in full, but will content myself with saying, that if the State Fair produced nothing else than the Chancellor's Address, it would have amply repaid the Society and the Farmers of Wisconsin for the time, money, and labor expended in getting it up.

At the close of the Address, the thanks of the Society were cordially voted to the Chancellor, and then the Reports and Awards of the Examining Committees were read to the audience. These were very numerous—nearly four hundred premiums, or diplomas, having been awarded to the different competitors. The full list will be ready for publication in a few days.

With the award of the Premiums the Fair closed, and the crowd soon began to melt away; the exhibitors gathering together and packing up their specimens, and the spectators dispersing to their several homes. Long ere nightfall the grounds were cleared, and nothing but the Tent, the sheds, and the exterior fence remained to mark the spot where the first State Fair in Wisconsin had been held. The number present during the last day is variously estimated at from seven to ten thousand. Nearly four thousand shilling tickets were sold at the gates, in addition to about four hundred members' tickets. There were, in all, four hundred and sixty-one entries, some of them covering thirty or forty articles; and this too, though none of the Western Counties had any specimens on the ground, and the Northern Counties but few. Rock County, of course, was there in all her strength, and made a fine show, as well of men and women, as of the products of the Farm and of the Work Shop. Dane County was very numerously and respectably represented—the delegation, two or three hundred strong, coming into Janesville, in procession, with a fine band of music at their head, early on the first day. Kenosha, Racine, Walworth, and Milwaukee also had numerous representatives and many handsome specimens at the Fair. Waukesha, Jefferson and Dodge were creditably though not largely represented.

I was very agreeably impressed with the looks and demeanor of the throng on Thursday. There must have been, in the afternoon, full eight thousand persons within the enclosure; all orderly, well-behaved, and decently dressed people. There was not a single intoxicated man in the crowd; no riotous or disorderly conduct; no gambling appliances; no liquor booths; no profanity; nothing, in short, to offend the eye, or mar the general enjoyment. Janesville had put on 'her best bib and tucker' for the interesting occasion. Her citizens vied with each other in their efforts to make their numerous guests comfortable during their sojourn in this garden-spot of Wisconsin. 'The latch-string hung outside' of every door.' No one had to ask twice for food, or lodging.

This fine town has grown apace, during the three years that have elapsed since my last visit here, and shows gratifying and unmistakeable evidences of enterprize, progress and thrift. The beautiful Rock pours a full and steady tide through the heart of the village, furnishing an abundant and very uniform water-power. On either hand spreads out the lovely and fertile expanse of Rock

Prairie; a region of country which the traveller who sees once will not look upon the like of again, wander whither he may. Nearly five thousand inhabitants are now gathered together in and about the town site, and I see nothing in the future to prevent JANESVILLE from maintaining its proud rank as the largest, the most prosperous, and the most beautiful of the inland towns of our State.

I might dwell some time longer upon the beauties of Janesville and its vicinity—the hospitality of its inhabitants, and the abundant success of our State Fair—but I have already made a sufficiently long story of it. Let me say, in conclusion, that the Fair, in its results, far exceeded the most sanguine expectations of its projectors, and reflected infinite credit upon the enterprize, the good taste, the skill and the intelligence of the Farmers, Mechanics, and Working men of Wisconsin. To the President of the State Society, Mr. E. W. DRURY, of Fond du Lac; the Secretary, Mr. ALBERT C. INGHAM, of Madison; the members of the Executive Committee; and especially Judge TOMPKINS, of Janesville, the *working*-man of that Committee—the thanks of the People and the Press of Wisconsin are due for their untiring, intelligent, and successful efforts to get up and carry through the Fair. For one, I render my share of these thanks most heartily, and if the next State Fair shall be held, as I trust it will, at Milwaukee, I hope to repay some of the many obligations I am under, as well to these gentlemen, as to some special good friends at Janesville and Madison, for abundant courtesies and civilities received at their hands.

R. K.

It was indeed a triumph! Without patronage and without money the Society was organized. Without members and without aid—feeble, and in its infancy, the Society held its first Fair. No prestige of success enshrouded it. But the result has dissipated all fears; and for this result, so auspicious, the Committee congratulate their fellow members of the Society, and their fellow citizens of the State.

The delicate duty of deciding upon the merits of the various articles presented was delegated to several Committees, selected, as far as possible, with reference to their familiarity with kindred subjects. The awards of Premiums the Committee have not thought best to introduce into this Report, as they appear among the accompanying papers.

The Report of the Treasurer herewith presented shows that the amount paid out for premiums, and also the expense incurred for diplomas awarded, was $140; a small amount when compared with the wishes of the Committee, but yet a large one when the condition and circumstances of the Society are considered. The Society has now, however, reached the position it is believed that will enable

it in future years to bestow a much larger amount, as premiums, for the reward of successful industry.

The finances of the Society are in a healthful condition, as will be seen by the balance of $85 45 now in the treasury. The expenditures of the last year were only those that were required to meet the most urgent and necessitous wants; and it is a source of much pleasure to the Committee that they have been enabled to manage the pecuniary affairs of the Society so economically, and yet so judiciously.

Throughout the year much embarrassment has been experienced from the low state of the funds; and in order to provide against such a calamity in future, it is the united opinion of the Committee, that an attempt should, as soon as possible, be made to secure, either by Legislative grant, or by individual donation, a permanent fund, the interest of which will be sufficient to meet the current expenses and wants of the Society. In other States, legislative aid has been freely given to similar organizations; and it is hoped and believed by the Committee, that the Legislature of our own State of Wisconsin will not be backward in extending that aid to the Society which its merits demand, and its wants require.

Another object that the Committee have had in view, is the formation of an Agricultural Library; but owing to the limited funds, no great progress has as yet been made. It is hoped, however, that a good beginning may be made in this matter during the coming year; and the Committee feel assured, that if the foundation is only laid, a small sum annually appropriated will be sufficient, when taken with the donations of books that may reasonably be expected, to give us, in time, a good Library.

Connected with this, is the formation of an Agricultural Museum, where may be stored as well the primitive instruments of husbandry, as the more complicated and scientific implements of the present day. In this way the instruments which have stood the test of time and experience, may at once be seen and appreciated; while those that have undergone change, will be placed side by side with the improvements and modifications which have subsequently taken place. Here, too, we would also deposit approved seeds, samples of premium wools, specimens of the various raw materials which enter into the manufacture of our fabrics, and all articles which relate to the kindred objects of our Society.

In a conference recently had between the Executive Committee and a Committee of the Board of Regents of the University of Wisconsin, it was mutually determined that an attempt be made, at once, to procure the establishment and

organization of an Agricultural Department in our State University. The importance of this step being speedily undertaken is obvious, without doubt, to all; and it should therefore receive that attention on the part of the Society which it, in the opinion of the Committee, demands.

The Committee cannot close their Report without tendering their thanks to those who have so kindly aided them in their labors during the past year, and especially would they express their obligations to Albert C. Ingham, Esq., the Secretary and Managing Officer of the past year. Upon him the great burden of the Society has been thrown, and nobly has he sustained it. In conclusion, the Committee again congratulate the Society upon the success which has attended the labors of the past year. So unexpected, and yet so far beyond the hopes of the most sanguine, has been the progress of the Society, that the Committee feel amply repaid for the labor expended in its behalf. The Society has now taken root, and is in a vigorous state. It has already taken high rank, and with proper direction it may soon assume that position which the cause in which it is engaged so deservedly demands; and from a feeble plant it will soon become the sturdy oak, extending its branches far and wide—a pride—a glory—and a blessing to our own Wisconsin. That this may be its fate; and that its course may be continually onward is the united wish of the Committee.

On behalf of the Executive Committee, respectfully submitted.

HENRY M. BILLINGS,
Vice-President.

Madison, January 21st, 1852.

ENTRIES AT JANESVILLE.

CATTLE	52
HORSES	68
SHEEP	120
SWINE	20
FARMING IMPLEMENTS	43
DAIRY	7
FLOUR AND CORN MEAL	4
DOMESTIC MANUFACTURES	14
ORNAMENTAL NEEDLE WORK	23
FRUITS	40
FLOWERS	12
MISCELLANEOUS	58
	461

ANNUAL ADDRESS.

The Society was called to order at Three o'Clock, P. M., of the second day of the Fair, under the spacious Tent of the Society, by ERASTUS W. DRURY, Esq. President; and after the performance of an appropriate piece of Music, by the Bands in attendance, the President, in a few appropriate remarks, introduced the Hon. JOHN H. LATHROP to the audience.

ADDRESS BY JOHN H. LATHROP, LL.D.

CHANCELLOR OF THE UNIVERSITY OF WISCONSIN.

Mr. President, and Gentlemen of the State Agricultural Society:

The extreme division of labor and of employments, concerned in the production of material wealth, by reason of which a greatly multiplied population is sustained at a far more elevated standard of enjoyment and of culture, both of body and of mind, is the distinction of modern civilization.

Indeed, all civilization implies a departure from the personal isolation and independence of the purely savage state—it implies social arrangement and classification, fitted more or less discreetly to the production of proposed social ends; be those ends political or economical—and the character as well as the permanence of the system, depends, ultimately and properly, on the adaptation of its arrangements to the real and permanent wants of men—on the wisdom of its means, and the benevolence of its ends.

In most of the ancient forms of civilization, the artificial arrangements of society were for the benefit of a governing body, who wielded the civil power and directed the military arm of the state; while the LABOR which sustained the whole, was fixed in its position at the base of the social pyramid, by the hereditary disabilities of caste; or under the more crushing weight of territorial serfdom, or of domestic servitude.

Under social conditions like these, which divorced the intellect of the State from its productive arm, there is no ground for surprise at the brilliant results wrought out by the governing mind, in an Egyptian, a Greek, or a Roman civilization.

We might expect to see, as we do see, the fine arts approximating towards the perfect ideal of the beautiful and the grand—the breathing marble, the column with its lofty capital, surmounted by the dome and the arch.

It is not strange that the free intellect of the happily born should have luxuriated in the attractive field of the liberal sciences, guiltless of any intended bearings on the useful or the practical; that geometry and astronomy had their votaries; that music, statuary and painting had their triumphs; that a literature should have sprung into being, recording the utterings of the genius of history; the inspirations of the poetic muse; and the profounder, though scarcely less imaginative speculations, of a metaphysical philosophy.

It is not strange that eloquence should have poured its full tide from the Bema and the Rostrum—or that "the pride, the pomp and circumstance of glorious war," should have fired many a gifted mind with the strange ambition, to swell the catalogue of those who have lived only to desolate and to destroy.

But while the liberal arts were thus expanding into being through the irrepressible energy of the free and the governing mind, unencumbered, as it was, by the burden of productive toil; the USEFUL ARTS, inspired by no such living energy, abandoned to the practice of those whose adequate qualification was deemed to be the strong arm, the bowed and submissive spirit, and the unfurnished head, were destined to no corresponding development.

Roman history hands down to us, indeed, one Cincinnatus, who soiled his patrician fingers with the touch of the plough—but, though careful to record his military glories, fails to inform us that Agriculture was at all benefited by the contact. In the light of the present age, I am afraid we must set down the fabled Triptolemus as a very poor farmer; the Cyclops as indifferent blacksmiths; and even Dædalus himself, not very much of a mechanic.

Under such conditions of the social system, political and economical, was constructed that high wall and deep ditch, which for long centuries of duration, and through various phases of society, continued to separate, broadly and invidiously, the Liberal from the Useful Arts—and I need not add that the traces of this discrimination are not yet obliterated. There lingers in our midst even yet, such a thing as professional pride; as traditional disdain of the industrial avocations—the tattered remains of that robe of disparagement, which once shrouded the manly form, and embarrassed the strong arm of brown industry.

But it is the glory of modern civilization, that its tendency is to exalt every social valley; to bring down from its pride of elevation, every mountain of privilege; to demolish every wall of partition between the Liberal and Useful Arts; to shed the light of Science on the industrial processes, and to bring all the honest avocations of men, productive of social and individual good, into harmonious and efficient action. It proposes, ultimately and forever, to do away with every social distinction dependent on birth, class, or employment—and while it will multiply incalculably the aggregate amount of good wrought out by the improved mechanism of human society, it proposes to throw the good thus

elaborated open to equal and honorable competition; and to make the share each may vindicate to himself to depend, not as under the older forms of civilization, on the birth, rank, or calling of the individual, but on his personal character, and personal merit—on his precise individual value in the social system.

In order to fix the destined position, the value, and the duties of the AGRICULTURIST, in the economy of society, it will be needful to glance at the interior mechanism of modern civilization.

"In the sweat of thy face shalt thou eat thy bread," is the Scriptural annunciation of the great law of humanity, that LABOR is necessary to the acquisition and enjoyment of physical, intellectual, or moral good.

The resulting good, however, depends on the degree of wisdom with which human industry is directed.

The earth is capable of sustaining but a sparse population, and that at a low standard of physical comfort, as well as of intellectual and moral culture; where the labor of each individual is directed to the supply of precisely those articles, and those only, which meet his own wants.

In the aspects of modern civilization, on the other hand, as has been already hinted, nothing is more characteristic than the very dense population which the earth is able to sustain, at a vastly more exalted standard of physical comfort, and a still higher standard of intellectual and moral cultivation; and nothing is more essential to the introduction of those invaluable results, than that DIVISION OF LABOR AND OF EMPLOYMENTS, which we observe to obtain in all civilized communities, with a minuteness and distinctness, corresponding exactly with the type and the degree of the civilization which there prevails.

In the production of material wealth, in its thousand departments, AGRICULTURAL and MANUFACTURING, by confining skilled labor to its habitual and well-known processes, the aggregate product of human industry destined to the supply of human wants, is increased beyond calculation, and time is saved, and means furnished to the individual, for the purposes of intellectual, moral, and social improvement.

But, again; the division of employments in the various departments of the Agricultual and Mechanic Arts, begets the necessity of EXCHANGE—and if each producer were bound to effect his own exchanges, at home and abroad, a large portion of his time and means would be consumed, and a large amount be thus subtracted from the aggregate production of the community.

By separating, then, the business of exchanges from the business of production —by setting up the class of merchants—the producer is no longer withdrawn from the creation of values—the increase in the aggregate production of the community pays, in the shape of commercial profits, for the skilled labor of

the mercantile profession—leaving a balance in the hands of producers far exceeding their whole production, provided they turn aside to act the merchant for themselves—the physical wants of all are better supplied, and time and means are furnished for an advanced stage of intellectual and moral cultivation.

But our economical analysis of society may be carried still further. In order to the greatest aggregate production of physical values, the health of the producing and the exchanging classes, including all ages and conditions, must be provided for, and thus a demand is created for skilled labor in the HEALING ART. But if each individual were bound to acquire this skill for himself, and to seek out and compound his own simples, production must be suspended the while; the skill comes too late; the race is dying out, not only of disease, but of starvation. It is sound economy, therefore, to sustain a medical profession, as a distinct and independent employment—for the consequent enlargement of the aggregate wealth of the community, will pay the charges of the profession; leaving the producer with ampler means, and sounder health, and unbroken time, to provide, not only for the gratification of his physical wants, but also for the more exalted purposes of his being.

But, again; it is essential to the progress of a community in physical wealth, and other forms of social well being, that the rights of men in the civil state, should be ascertained, declared, defended, and vindicated; and the call for skilled labor in this department must be met, or the law of the strongest will prevail; violence will take the place of social order, and civilization is at an end.

Shall this call for skilled labor in the LAW, be met by each producer for himself? Or is it sound economy that he should meet it by Attorney? That a profession of those learned in the law should be sustained, to do that service which the individual cannot do for himself without ruinous neglect of the processes of production and exchange? Civilization and economy return their united answer, that the Bar must be sustained as a distinct and independent profession.

Again; that righteousness exalteth a nation, is the scriptural annunciation of the general principle, that the sentiments of reciprocity and benevolence, pervading the common mind, constitute the broad and deep foundation on which reposes the structure of civil society. The sentiment of justice, pervading the common mind, gives to beneficent legislation its vitality and its strength: it lies at the foundation of the right of property: without it, production and accumulation are at an end, and civilization is but an empty name.

How divinely then is the PULPIT adapted to imbue the common mind with that righteousness which exalteth a nation. It inculcates a perfect rule of life, the fountain of all just legislation; and what is vastly more important, it enforces that rule, not like the human legislator, by sanctions drawn from this present life only, but by those which respect our immortal being, our relations to GOD, the

Judge of all, and to the community of spiritual intelligences throughout eternal ages—the sanctions, namely, of the Christian faith, without which, as the experience of man in all ages has shown, the best constituted and most perfectly balanced social structures have tended uniformly to decay and dissolution.

These ministrations of the pulpit require skilled labor. Sound policy and sound economy therefore demand that these ministrations be committed to the clergy, as a distinct and independent profession. Give thyself *wholly* to these things, is the apostolic injunction.

Such is a very brief analysis of the economy of civilized society, as we now see it.

The producing classes, throughout the various subdivisions of the agricultural and mechanic arts, create all the values destined to the supply of the physical wants, and to the gratification of the tastes of the whole community.

The mercantile classes produce nothing; but by transfer and exchange make such a disposition of existing products, as to benefit producers, to enlarge the volume of production, and minister to the well being of all.

The professions, strictly so called, terminate their industrial processes, not on physical products, but on those conditions of society, which give to producing and exchanging agents the power and the disposition to contribute in the highest degree to the general good, and to their own profit, through the more efficient and beneficial action of the various industrial agencies. The results of professional labor, are the health, the order, and the morality of the community.

But there is another element in modern civilization, which our analysis has not yet reached, whose office it is to qualify, and mould and fashion all the rest—I mean the great work of FREE and UNIVERSAL EDUCATION.

The agency of the educator terminates not on physical products, nor yet directly on social conditions, but on the MAN HIMSELF. His raw material is the young mind, the unformed intellect of the community. His resulting product is the finished man, prepared by varied knowledge and intellectual discipline, to act well his part, as an agriculturist, as an artizan, as a merchant, as a physician, as a lawyer, as a divine; to be useful in the varied relations of private life; useful in the civil state, and in those more exalted relations, which concern him as a member of the human family, and a subject of the universal empire of GOD.

It is quite obvious, then, that the educator, whether of the school or the press, stands at the point of power, and applies the moving force to the mechanism of human society. For the successful action of this mechanism, intelligence is necessary at every point—on the farm, in the manufactory, in the counting-house, in the practice of the healing art, at the bar, and in the sacred desk.

There is not a single employment, within the scope of our economical analysis of society, whose results would not be rendered, by an increase of intelligence,

more beneficial to the community, and more honorable and profitable to the industrial agents concerned in it. Reason teaches us, that the communities which are the better educated at every point, must be the more wealthy, the more powerful, as well as the more respectable.

The experience of the civilized world abundantly verifies this conclusion. We see that the more intelligent the industrial agents, the more ample and valuable the resulting production, throughout the whole economy of society.

The way is now prepared, to state with more distinctness, the nature, position, and office-work of AGRICULTURE in the social economy.

In the beginning, man was alone with Nature. Without arts, without capital, without implements, he took his sustenance from the bosom of the earth, as the common mother of the race.

Agriculture, in the most restricted signification of the term, implies a departure from this condition. Man was sent into the world with a commission, not merely to share with his fellow animals, the spontaneous productions of nature, but with a charge to search out the physical elements, to determine their capabilities—to make the needful combinations—to bring into action their productive powers, not only to supply the animal wants, and minister to the pleasures of his organic nature, but to render them tributary to his intellectual, moral, and social development, and his ultimate spiritual elevation and well being.

In the discharge of this great commission, every avocation of man has its work to perform. It is the province of Agriculture to begin the process, by the tilling of the ground, as the term imports—by stimulating and guiding the productive energies of the physical elements to results infinitely transcending, in quantity and quality, the yield of these same elements, unaided by human agency.

The gross results of Agriculture constitute, what, in the language of economy, is denominated *raw material;* and they are so called, precisely because, with almost the single exception of fruits and green vegetables, material products do not come from the hands of the agriculturist, prepared for human use. They are gross and incomplete, the proper material which the Arts are to take, and to mould, and fashion into forms of utility and beauty, adapted in the finished state, to the satisfaction of the physical wants, and the gratification of the tastes of men.

In the three great classes of our physical wants, food, clothing and shelter, few indeed are the commodities which come from the hands of the Agriculturist, ready for the consumer!

Men want not wheat, but bread—therefore the CROP, as raw material, must be subjected to the manufacturing processes of the miller and the baker.

Men want not wool, but clothes—therefore the fleece must undergo successive changes, in the hands of the carder, the spinner, the weaver, the fuller, and the

dyer, before it reappears in the form of cloth. And what does the cloth avail, till the tailor, with his divine art, finishes—the man.

So men want not timber or stone, but houses, barns, ships, temples of education, and temples of religion; and here, again, the yield of the Agriculturist must be subjected to the almost numberless manufacturing processes, of masonry and architecture.

It is obvious to remark, therefore, that it is the distinction of Agriculture, that it furnishes the material for all the manufacturing and exchanging processes—that there is nothing in the hands of the Artizan, or the Merchant, that has not been in the hands of the Farmer. Agriculture thus lies at the foundation of the economical structure of society.

But it is entirely proper here, to submit the caution, that too much of relative dignity and importance must not be assumed to Agriculture, in consequence of this distinction. To him who enjoys the final product, the initial, the medial, and the finishing processes, are all equally important.

It is true, that without the raw material furnished by the Agriculturist, the occupation of the Artizan, and the Merchant, is gone forever. But without the processes of art and of exchange, without the Merchant and the Artizan, what would be the value of the raw material? Would it be produced at all? It is true, that the structure cannot stand without the foundation. But what is the value of the foundation, if no superstructure is to be erected upon it? Would the foundation be laid at all?

It is no disparagement to Agriculture, that it cannot say to Manufacture, I have no need of thee. It is no disparagement to both, that they cannot say to Commerce, We have no need of thee. Neither is it any disparagement of these three great industrial interests of society, that they cannot say to the Professions, We have no need of you. Nor yet, does it disparage all these—aye, it ennobles them all—that they cannot say to Education, We have no need of thee.

The truth is, we are members, one of another, with mutual uses and dependencies. As in the natural body, so there is a divine harmony running through the whole structure of the body economical. One member cannot suffer without all the other members suffer with it.

But to elaborate this thought more thoroughly and minutely:

I. Agriculture is interested in the prosperity and improvement of the manufacturing interest, throughout the whole circle of the Useful Arts:

In the first place, manufacture takes the raw material of Agriculture, and Agriculture takes in return the perfected product of manufacture. A commercial process may intervene: but the essence of the whole transaction between Agriculture and Manufacture is, when completed, a barter of the products of the one for the products of the other. The existence of the Arts, creates a demand for

the products of the farm. Were all men agriculturists, the market would disappear, and the surplus of the farmer would lose its exchangeable value. As the number and the prosperity of those interested in the manufacturing and mechanic arts increases, the demand enlarges, and remunerating prices of Agricultural products reward the industry and skill of the farmer.

But not only does the farmer thus secure the advantage of an intenser demand for his own surplus, but the prosperity of the Arts is attended with new applications of Science, the introduction of new machinery, the more minute and methodical division of labor, and a greatly increased facility and skill in the executive processes. All this works a saving in the cost of production, and a diminution of the price of the manufactured article to the Agricultural consumer. The prosperity of the Arts, therefore, works a double advantage to the farmer, in the intenser demand for his own surplus, and a greatly enlarged reward in the shape of finished products, which he is able to command in return for it—in the enhanced value of the raw material on the one hand, and the reduced price of the perfected article on the other.

But again, the progress of discovery and improvement in the Arts, and the increased demand for raw material, is sure to regenerate Agriculture itself, by prompting to a broader and deeper cultivation, by the introduction of new articles of produce; by stimulating to the adoption of more approved processes, and to new combinations of the physical elements—to a more judicious division and methodical arrangement of the different departments of field labor, to greater facility and skill in all the executive operations, and finally to the habitual improvement of Agricultural implements, from the most simple to the most complicated, until the farm comes to vie with the shop itself, in the number of its inventions, and the perfection and productive power of its mechanism.

It is in perfect accordance with these views, that England, transcending all other nations in the variety and perfection of her Arts, is unrivalled in her Agriculture. It is an equally apt illustration of the truth of our doctrine, that Poland, an annual exporter of grain, but without arts, is the poorest country in Europe.

In the early settlement of wild tracts of the earth's surface, by the aggressive march of civilization, Agriculture is not only the dominant interest, but from the nature of the case, it may be said to be almost the only interest.

In such conditions, it has not unfrequently happened, that the Agricultural habit and sentiment have been so exclusively and intensely cherished, as to amount to a sort of economical bigotry, scarcely tolerant of the introduction of a disturbing social element, in the form of Manufactures and the Arts. Some of the planting States of this Union have hugged themselves into poverty, while sneering at the "lords of the power loom and the spinning jenny."

Georgia, the banner State of the South, is nobly redeeming herself from the thraldom of this sentiment. The loom and the spindle have already brought her into honorable competition with the industrial agencies of the North, and are awakening her AGRICULTURE to an energy and a thrift, which follow only in the train of Art.

Let me say, then, to the farmers of Wisconsin, whose voice is potential in the councils of the State, that they can confer no greater boon on Agriculture, than to invite the Arts in all their variety, to come and make their permanent abode in our midst. By a system of liberal, just, and wise legislation, affording facilities for permanent investment, closing the avenues to fraud, and enforcing rigidly the performance of contracts, manufacturing capital will be induced to break away from its moorings abroad, and come and cast anchor, without distrust, upon our shores.

Agriculture could do nothing more suicidal, nothing more calculated to retard the growth and maturity of Wisconsin, than to countenance that narrow policy which would deny to capital, on our own ground, that facility of combination and that permanence of arrangement, which long experience, elsewhere, has demonstrated to be needful to the full and profitable development of the useful Arts.

II. The proposition next in order, in the discussion of this part of the subject, is, that Agriculture, in common with the Arts, is interested in the prosperity of Commerce.

It is a fact easily apprehended, that all the items of physical wealth, that is, all produced values, are the results of Agricultural and Manufacturing agency. Agriculture and Manufacture cover the whole ground of the production of values.

But the extreme division of labor and of employments, the secret of the stupendous production of modern times, begets the necessity of an extended system of *exchanges*, for the mutual benefit of the producers; and owing to the different and sometimes distant localities of production, *transportation* for the most part precedes exchange.

To effect this transportation and exchange—to take commodities from the hands of the producer, and place them in the hands of the consumer—is the precise office work of Commerce. Of the whole produced value of Agriculture and Manufacture, Commerce then, must take to itself that share which is, on an average, a fair remuneration for this service; leaving in the hands of producers a balance far exceeding in amount and value their whole production, provided the producers were obliged to effect transportation and exchanges for themselves.

But, although on the principle of the division of labor and of employments,

the setting up of the mercantile class, thus re-acts upon production, enlarging its volume, and enriching the producers themselves; still, it is an ultimate and fixed fact, which ought to be distinctly understood, that Commerce is a CHARGE on Agriculture and Manufacture—that the whole cost of the commercial machinery, must withdraw just so much of the gross value produced, from the hands of the producer.

If the commercial processes be clumsily and expensively performed, the producer suffers; he retains less of his value produced, and is so far forth less prosperous.

If the commercial processes be skilfully, expeditiously, and cheaply performed, the producer has the benefit of it; he retains more of his values produced, and is so far forth more prosperous.

The manifest inference is, that the farmer is interested in every improvement of the commercial processes, which will diminish the expenses of transportation and exchange—as truly so as he is in those improvements in manufacture which diminish the cost of production.

The improvements in ocean navigation, costly as the steamship is, by cheapening freights, are enriching producers on both sides of the Atlantic.

The immense array of steamboats which float upon our inland waters, as a part of the machinery of our internal trade, with their frequent loss, and destruction of property, would seem to constitute an enormous charge upon the industrial interests of the country.

But to banish steam from our lakes and rivers, and to return to the raft and flat boat, and other forms of the time consuming, and labor consuming navigation of the last half century, would be to impoverish and desolate the interior—for the simple reason that the enormous amount of our present lake and river trade, far transcending our foreign commerce, could not be carried by a craft like that of the past generation, without a tenfold expenditure of time, labor and money—and at whose charge? At the charge of the producer.

If the produce of the farmer should go forward to market, the compensation of the commercial agency would absorb the whole value, leaving no balance for the producer. If the manufactured commodities necessary to meet the wants of civilized men, were brought into the interior from the commercial mart, they would come to the cultivator of the ground at a price which would place them essentially beyond his reach.

It is obvious enough, that under such conditions, production and trade would fall together, and a greatly reduced standard of enjoyment and civilization would prevail throughout a sparsely populated interior.

Without the steamboat, what would have been the condition of the great basin of the St. Lawrence, and of the great valley of the Mississippi, on this very day?

Well assured am I, that the last track of the moccasin would not have disappeared from the ground where we are now standing, surrounded by the emblems and the garniture of civilization.

Again; canals and railroads, constitute now, a great part of the commercial machinery of modern civilization, transporting a large and annually increasing portion of the travel and the merchandize of the whole country.

When we contemplate the vast extent of this net-work of internal improvement, the stupendous expense of the construction, and the corresponding outlay for the motive power, for the boat and car; and the more especially, when we sum up into one great aggregate, the annual receipts of the system, of which aggregate the Erie canal alone furnishes a yearly item of more than $3,000,000, well may we wonder at the miracle, that the shoulders of Agriculture and Manufacture are broad enough to sustain, uncrushed and unbent, the whole burden of the charge.

And yet they do sustain it. Not a dollar of freight goes into the treasury of these improvements, which is not taken from the produced values of those who are ultimately the mutual parties interested in the exchange, and in the consumption of the commodities transported. The gross values of the producer are diminished, aye, *taxed*, if you please, to this amount—and the farmer pays his portion of the TAX. But is he oppressed by it?

If the farmer of Western New York thinks so, let him by all means eschew the canal and the rail road—he is under no compulsion to use them—let him call up from an unbroken slumber of a quarter of a century, the teaming gear of his older brother; let him haul his Agricultural surplus to the good old Albany of his brother's recollection, and his domestic stores back again to his home; and let him, on the next rainy day, sit down and reckon up his savings. How will his tax account stand then? Why, gentlemen, the penny wisdom and pound folly of such a farmer, would be the scoff and the jeer of his neighborhood.

And what shall we say of the economy and thrift of a State, which, by constitutional provisions incapacitates itself from fostering, encouraging, and aiding works of the most manifest utility, and of the very greatest importance to the prosperity of the farmer—and by its jurisprudence and general course of policy, so relaxes the obligation of contracts, as to render foreign capital too distrustful of individual and company securities, to answer the loud call of the suffering producers, "come over and help us."

The permanent economical benefit of the canal and the railroad to the farmer, is three fold:—1. In consequence of the reduction of freight, his produce is worth more on his farm.—2. The merchandize which he needs costs less at his own door, for the same reason.—And 3. Because the commercial agency thus takes away a smaller portion of his produced values, leaving a larger balance in

his hands, he is affected precisely as if his land had become more productive; therefore his real estate rises in value.

The importance of this last item of advantage may be illustrated by a single case. The Erie canal cost originally $10,000,000. A rise of two dollars per acre, throughout a border of both banks of the canal, thirteen miles wide, would cover the whole cost of construction!—and where is the acre of feasible land within those limits, which is not worth, to-day, five, ten, fifteen, perhaps twenty dollars more, than if the work were undone?

Perhaps you will say, if this be so, the farmers of New York could have afforded to construct the canal themselves.—And so they might. But had they the needful information? Had they the unanimity, the confidence, the courage, the capital, or the credit to command the capital? Could any voluntary company have been formed, with the adequate courage, and capital and credit, to grapple successfully with the gigantic difficulties of the work?

No, Gentlemen,—had not the energies—the capital—and the credit of the STATE, been enlisted and consecrated, in trembling hope, to the accomplishment of the then unparalleled enterprise, it would have remained probably unattempted, certainly unaccomplished, down to the present day.

And it was the genius of CLINTON, that inspired this trembling hope—that nursed it into firm resolve—that bore aloft that firm resolve, high above the opposition of the trading politician, the scoff of the blasphemer, and the ridicule of the sceptic, to a magnificent and triumphant completion. While thus engraving his own memorial, in a long line of glory, on the soil of his native state, he was making his mark on the age. The power of his great example was felt throughout the length and breadth of the land. The din of improvement, in its progress, has been extending from State to State, awakening Agriculture to a new life and a new thrift, till there is scarce a hill top in our country, whose horizon does not bear some testimony to the beneficence of the far reaching policy of Clinton, and whose weary industry has not been cheered and refreshed by the shadow of his great name."

But who will say that the Erie and Champlain canals were more important to the trade of New York and the great basin of the St. Lawrence in 1816, than the Milwaukee & Mississippi, and the Rock River Railroads are, at this moment, to the trade of Wisconsin, and of the vallies of the Upper Mississippi, the Upper Missouri, and the Red River of the North.

And who will say that what was wisdom in New York then, would be folly in Wisconsin now? Where, then, is the Clinton of Wisconsin? And do the barriers of your constitution send back a cheerless echo to the voice of your inquiry?

Farmers of Wisconsin! you CANNOT AFFORD to let these great enterprises languish and die. If private credit cannot SEASONABLY build the roads, public

credit can. Your potential voice makes the laws; it makes constitutions—aye, and unmakes them too. I do not say that you can find a Clinton—such a man is God's benison on an age,—but you have the roads. Where there is an IRON WILL, there is an IRON WAY!

But again; Agriculture is not only interested in the reduction of the cost of the *transportation* of commodities, but is equally so in cheapening that other operation of commerce denoted by the term *exchange*.

The most obvious mode of effecting exchanges is, of course, by the direct barter of the one commodity for the other. But one difficulty in the way of barter as a system of exchanges is, that commodities or products, are not mutually and universally receivable.

For example, the shoemaker wants a coat, but the tailor does not want shoes. Perhaps the shoes may be bartered for hats, but the tailor does not want hats.—Perhaps the shoes may be bartered for corn, but the tailor does not want corn. And there is no predicting the number of exchanges, and the waste of time necessary to enable the shoemaker to find some commodity which he can barter for the coat.

The difficulty lies in bringing together parties who will be mutually benefitted by the barter. And this difficulty becomes aggravated by every step of advancement in the division of labor and of employments.

Barter, then, is obviously compatible, only with a low state of civilization, and the necessity is early suggested, of providing some commodity which shall be universally receivable, which the producer may obtain, directly, for his surplus, and with which he may obtain, directly, the commodity which he needs; and thus enable him to remedy the difficulty in question and diminish the expense of barter. Such a commodity is MONEY—it is universally receivable.

There is another difficulty, with respect to barter, which requires to be stated, in this connexion; that, namely, of adjusting to each other the values to be exchanged. The farmer, for example, takes his horse to market, desirous of receiving in return various articles of smaller value, in the hands of different individuals. As the horse cannot, from the nature of the case, be bartered, a part here, and a part there, the series of transactions is altogether impracticable.

The commodity money, then, in order to do away with the inconveniences and the impossibilities of barter, must, in addition to the fact of being universally receivable, be capable of division and subdivision, so as to adjust it to all possible values.

Gold and Silver coin embodying these two qualities of universal receivability, and divisibility at will, has been adopted, by common consent, and the action of civil governments, as the money of the commercial world; and is as distinctly a *part of the machinery of commerce*, as is the railroad or the steamboat.

It is the office of the railroad, to facilitate and cheapen transportation, and this constitutes its whole value as a railroad; so it is the office of coined money to facilitate and cheapen exchanges, and this constitutes its whole value as money. Were barter entirely convenient and economical, money would have no office to perform—no necessity would have suggested its creation—its presence in the business of the world be without meaning—it would never have been thought of.

But when we consider that the exchanges of this country require a currency of some $300,000,000, and that the annual charge for this expensive commercial agent is the yearly interest of this sum, with the addition of the annual cost of the coinage, the loss by wear, by shipwreck and otherwise, well may it be asked again, are the shoulders of Agriculture and Manufacture broad enough to sustain the burden of this charge.

The answer is at hand: they certainly do sustain it—and that, with incalculable advantage and profit to the producer. For the simple reason that money, although itself an expensive agent, so facilitates and cheapens exchanges, as to relieve agriculture and manufacture from the far greater cost of making those same exchanges through the time consuming and labor consuming processes of barter.

The cost of the medium is, if you please, a *tax* on the producers of value, and the farmer pays his portion of the tax—but he finds a manifold compensation, in the relief from the incalculably greater tax, which the system of barter would entail upon him.

Enough has now been said on the part that money plays in the phenomena of commercial exchanges, to prepare the way for the proper understanding the assertion, that the farmers of Wisconsin, as well as the farmers every where, are deeply interested in setting up and maintaining that form of the circulating medium which will work the greatest reduction of the cost of the whole commercial machinery, and all the operations of trade.

Metallic money facilitates exchanges, obviates the inconveniences of barter, and cheapens the commercial processes; it is sound economy therefore, for producers to introduce and maintain a large and costly volume of metallic money.

If a currency of representative values will facilitate exchanges in a still higher degree, will obviate the inconveniences of metallic money, and cheapen still further the commercial processes, it will be equally good economy for producers to set up, for the uses of commerce, a currency of representative values, with all the safeguards suggested by the experience of the past.

And this brings us to the precise question to be submitted, at the coming election, to the people of Wisconsin—a question, of no trifling interest to the farmers of the State.

If it be true, that the merchant can serve you more economically with a currency of representative values, than with the agency of metallic money, then, if you compel the merchant to use the latter, he must indemnify himself by paying less for your produce, and charging more for the merchandize he sells you. If you allow him the use of the former, he will be able to pay you more for your produce, and will charge less for merchandize.

If this be so, the policy that would send you back from a currency of convertible paper, to a pure metallic circulation, would send you back from the railroad to the turnpike, and from the steamboat to the sloop, or the flat boat. Do you say that the paper currency has its risks and its losses?—so has the steamboat.

The inquiry which lies at the bottom of all these cases is, whether the alleged improvement does, or does not, in point of fact, after allowing for all its unavoidable imperfections, work a diminution of the cost of the commercial machinery. If it does, the saving enures to the benefit of the producer, just as surely as a stone in mid air falls to the ground—and the farmer has his full share of the benefit.

As the time and the occasion do not permit me to state my views, fully, on the currency question here presented, I shall not enter upon its discussion at all. I only present the naked point on which the whole question turns, and leave the decision where the constitution leaves it—with the people.

Farmers of Wisconsin! On the question of authorizing the issue, within the State, of a currency of representative values, if you believe that the introduction of the proposed system with the proper safeguards will facilitate and cheapen the processes of trade, and thus enable you to do your whole commercial business at less cost to yourselves, you will, at the approaching election, say AYE—if you do not believe this, you will say NAY. It is a question of great import to Wisconsin. God grant that you may decide the question wisely.

But again, Agriculture is interested in the growth and prosperity of large towns.

A town or city may be regarded, philosophically, as a part of the business machinery of the country. It is, in part, a manufacturing agent, and in part a commercial agent. In both these capacities, it enjoys such a concentration of capital, enterprize, and intelligence, as to ensure the economical advantages of a minute division of labor, the perfection of the executive processes, and all the helps attendant on the invention and skilful use of machinery.

All these larger operations of manufacture and trade are carried on at immense advantages over the smaller; but if the laws favor the association of the smaller capitalists by general acts of incorporation, there is no danger of monopoly. The principle of competition is more active in the large town, and the consumer will

have the benefit of the diminution of the cost of the manufactured article, and of merchandize generally.

For this consumption, however, without which the large town cannot exist, it looks to the country, that is, in the main, to the agricultural producer. The town and the country are mutually markets to each other, and the *citizen* is as much interested to penetrate the interior with canals and railroads, as the *farmer* is to find these avenues for the transportation of his produce to the mart. We present interests here that are not antagonistical, but are mutual and harmonious. The town thrives by the growth and prosperity of the country, and the country by the growth and prosperity of the town.

All this is manifest—and yet it is no more strange than true that in some agricultural communities, there has sprung up a narrow jealousy of the town, grudging its prosperity, ripening into settled hostility—tainting, perhaps, the legislation of the State, by unequal taxation, and by denial of those facilities of production and trade, which are essential to the healthy developement of the town.

Farmers of Wisconsin! the towns which line your borders, and dot the interior, live not for themselves alone, but for you—they grow with your growth—they are your credit abroad, and your profit at home. An enlightened self interest, on your part, demands that your policy towards them shall be conceived in a liberal and comprehensive spirit.

The railroad is a swift witness of the identity of the reciprocal interests of town and country. It brings the rural districts under the very gates of the city; and it lodges the merchant and artizan at home, scores of miles, perhaps, from the scene of his daily toil. This indefinite expansion of towns, with their capital, intelligence and enterprise—this amalgamation, as it were, of the city and the country, is destined to play, henceforth, a distinguished part in the advancement of civilization.

III. But once more. Agriculture, in common with Manufacture and Commerce, is interested in the prosperity of the Professions.

It is conceded that the sustaining of the professions is a charge on the producers of value.—But it is also to be conceded, that without the agency of the professions—without the sound social conditions of HEALTH, ORDER, and MORALITY, production would be at an end. So much for the mere economical argument.

But when we consider the intrinsic importance of these social conditions themselves, we can hardly over-estimate the obligations of productive agency to professional service. Here, as in the arts and in commerce, "Live and let live," is a maxim addressed not so much to the magnanimity and generosity, as to the economical and social interest, of the cultivator of the ground.

But without extending our argument farther, the general proposition, that agriculture is benefitted by the advancement of every other interest essential to civilization, has, I would hope, been satisfactorily demonstrated.

That every other element in the economy of society, is reciprocally interested in the prosperity of agriculture, has been made, at least, equally apparent in the course of the argument.

To lay down the additional proposition, that agriculture is interested in the improvement and perfection of its own processes, might seem to be the superfluous statement of a mere truism.

Every farmer with a given amount of land, capital and labor, looks to his gross produce, as the proper return for his outlay—and on the volume and quality of this produce, depends his ability to command and to enjoy for himself and those dependent on him, the productions of the Arts, and the services of the professions. Every agricultural improvement looks to the larger *quantity*, or the better *quality* of the product. To promote these two ends is, of course, the more obvious and direct object of your association.

Having thus unfolded to you some of the outside relations of the great calling of the farmer, I gladly leave this important interior field to those who shall succeed me in addressing you on occasion of your future anniversaries, and who will bring to the task a knowledge of the theory and practice of Agriculture which I cannot pretend to.

I will, however, before closing, venture to call your attention to a few topics connected with this part of the subject.

In the first place, it is a truth that will become evident on a little reflection, that the division of labor cannot be profitably carried to the same extent in Agriculture, as in Manufacture. In the larger establishments we are told, there are ten distinct processes in the manufacture of the pin, each of which may employ the labor of its man, from one year's end to another. But not so with the processes of Agriculture.—One cannot plow throughout the year, and another sow, and another make hay.

But, on the other hand, there are certain classifications of the greater operations of husbandry. We hear, for example, of stock farms, dairy farms, grain culture, and the planting interest, comprising the subdivisions of the growing of tobacco, of cotton, of rice, and of the cane.

I take it to be sound doctrine in this connexion, that large tracts of country should not confine themselves to any one of these forms of husbandry—for a failure of the staple produce for a single season, would occasion unmitigated distress to the agricultural class, and affect disastrously all collateral interests of the district.

The partial failure of the wheat crop of two or three seasons past, furnishes an

illustration of this truth, the force of which is felt by the farmers of Wisconsin, sufficiently to admonish them of the expediency of extending the cultivation of corn, of oats, of barley, of flax, and other annual products—of introducing extensively stock raising, dairy, and wool growing, to all which uses the soil and climate of our state is admirably adapted.

Out of this extensive range of culture, it will doubtless be good policy for the individual farmer to select for his *leading* object, such form of husbandry as may be best adapted, in his judgment, to the soil he has to deal with, and the position of his farm with respect to market—and to carry along such collateral objects of culture as may prevent the exhaustion of the soil, and fill up his time by furnishing business for every season of the year.

By this course of policy, the advantages of the division of labor may be secured to agriculture, precisely as far as it would be profitable to carry it; improvements would be more likely to be introduced; and greater skill and economy would accrue to the executive processes.

In new and sparsely settled sections of the country where land is abundant, and labor greatly in defect, there exists, from the nature of the case, a strong tendency to spread cultivation over a large surface, overtaxing the superficial powers of the soil, in order to give the greatest immediate effect to the limited amount of human agency.

Looking to immediate results, the settler, no doubt accomplishes his purpose; but the habit of slovenly and unthrifty farming thus acquired, is apt to be persevered in, long after the necessity which seemed, at first, to justify it, has passed away. The soil, robbed of its apparent productive elements, refuses to yield its increase, and through the discouragement and impoverishment of the farmer, is condemned to years of sterility—when under a different treatment, it would have steadily improved in productive power, and have made a more and more grateful return for the good husbandry bestowed upon it.

The importance of acquiring a thorough knowledge of the THEORY, as well as practice of Agriculture, cannot, therefore, be urged too early or too forcibly on the farmers of Wisconsin. The education of the American farmer, does not now terminate in a mere knowledge of the routine of sowing and cropping, and in a dutiful adherence to the practice of his father and his grandfather.

There is scarcely a branch of natural and physical science, which has not now, its known and acknowledged bearings on Agriculture.

The construction and the working of agricultural implements of every class, call into daily operation the principles of Mechanics. Hydrostatics and Hydraulics have their manifest uses, on, and about the farm. It were vain to assume that the practice of stock raising has nothing to ask from the truths of Animal Physiology. And as man and the entire animal kingdom, seek their sustenance,

ultimately, from the herbage of the ground, vegetable physiology has still more important aid to render to every form of practical agriculture—determining the functions of the root, as imbibing the food of the plant, in watery solution; of the stem, with its organs of circulation; of the leaf, which retains and assimilates what is necessary to the structure of the whole and the character of the fruit, discharging into the atmosphere the superfluous matter in the shape of gases and vapor.

The philosophy of each of the imponderable agents, light, heat, electricity, and magnetism, has relations to vegetable life and health of an interesting and important character.

But of all the sciences, chemistry is the most fruitful in the aids it is destined to render to agriculture. By the analysis of the laboratory, we are put in possession of all the chemical elements of the vegetable kingdom, both those that are common to all plants, and those that distinguish one species from another. We are thus enabled to infer the composition of soil adapted to each plant; and by the analysis of a given soil, we ascertain the elements in defect, which it is the office of good husbandry to supply.

This leads us to the doctrine of specific manures—the basis of extensive improvements, made, and to be made, in practical agriculture.

Farmers have observed that some crops exhaust a given soil more rapidly than others. Chemistry detects the elements abstracted from the soil by the annual crop, and directs to the specific manures which will replace these elements, and keep the land in heart. Without the science, the land may be condemned to lie fallow, or to be recovered by the empirical and wasteful application of manures, in the grosser forms.

For example, tobacco, the vine, the pea, and clover, require lime in large quantities; and as the supply comes to the plant through the root, a succession of crops will soon exhaust the soil, unless that element be replaced by the hand of the farmer.

It cannot be doubted that every physical element found in the plant must have had its previous existence in the soil, or the atmosphere. "It is upon the clear understanding of this fact," as an English writer well remarks, "that the successful business of the farmer depends. It is calculated to raise the operations of the agriculturist to a level with those of the manufacturer; and instead of committing the cultivation of the soil to accident, as if nothing were understood respecting it more than the mechanical preparation of it for the seed, it will serve to explain upon what causes growth and production, and consequently their opposites, abortion, and non-production, fundamentally depend, and of course, will enable him to provide against both." All this is well said, and presents the valuable thought very clearly to the apprehension of the farmer.

While on the subject of the specific food of plants, it falls in my way to say, that a large portion of the organic matter of the vegetable kingdom, exists in the atmosphere, in the gaseous form, and is largely soluble in water. It is the office of rain and snow to bring down these elements, and to saturate with them that portion of the soil that has been mellowed by the plough—and the deeper the ploughing, the larger is the fund of these elements, subject to the draft of the root during a period of drought.

I might go on to mention the agricultural bearings of physical Geography, of Geology and Mineralogy, the philosophy of subsoil ploughing, and other considerations connected with the character of natural soils, and their permanent improvement. But time fails.

I close this part of the subject by a single additional allusion to the successful efforts which modern science is making to grapple with the uncertainties of the weather—to subject the hitherto hopeless caprices of the elements to known laws; and if not to hand over to the farmer the winds and the storms, the cloud and the sunshine, sealed up in a bag, at least to forewarn him of their alternations, and to enable him, by a prudent forecast, to press them into his service, and, measurably, to control their results.

And now, gentlemen, in this hasty summing up of the sciences, comprising what is esssential to the theory of agriculture, I would ask whether anything is included, which the farmer is not interested to know?—is anything included, which, if known by the farmers generally, would not contribute to elevate practical agriculture to an economical and social position eminently honorable and profitable to itself, and singularly auspicious of good to man?

I am uttering not the mere aspiration of hope, but the decision of sober judgment, when I say, that the day is not distant, when it shall be shame to the young farmer to commence the practice, without first having acquired the theory, of his profession.

I say of his *profession*, because, let it once be understood, that the industrial employments are to be approached through a course of scientific preparation, then the middle wall of partition between the liberal and the useful arts is broken down—let it be understood that Agriculture has its *theory* and its *philosophy*, then it rises at once to the dignity of a profession.

The sneer at the scientific farmer, which once disfigured the countenance of a self-satisfied "practical Agriculture," has already passed away, and given place to an expression of admiration at the taste, the economy, and the thrift of a better, because a *scientific* cultivation.

The sneer at the scientific farmer, if it ever meant any thing, when done into plain English, could have meant nothing less, than that a certain amount of *igno-*

rance was necessary to qualify a man for a sound practical farmer—a sentiment which falls strangely on the ear of the agriculturist of the present day.

The eminent success of model and experimental farms, and the labors of the agricultural press, have brought the mind of the entire community to a just appreciation of the value of the sciences, in their practical applications to Agriculture and the Arts, and the importance of their universal dissemination.

The conviction is taking fast hold of the mind of Europe and of the older States of this Union, that for the thorough acquisition of this valuable agricultural knowledge, it will not do to depend on the ephemeral influences of popular lectures and addresses; nor yet on the mass of information placed before the farmer through the agency of the periodical press. Agricultural seminaries are beginning to be constituted, where the science may be acquired, and in connexion with model farms, its application may be made familiar to the professional pupil, in preparation for the successful and profitable discharge of the maturer duties of the practical farmer.

These views are rational and just. Agricultural science, like all other science, is to be acquired by study and research. The discipline and the instructions of the school, are essential to its seasonable and thorough acquisition. Without it, the farming processes fall to the low level of routine and drudgery. With it, Agriculture vindicates its undoubted claim to stand, not only in the first rank of the experimental arts, but to take its position, side by side, with the learned professions, in dignity and honor, as well as in profit.

Farmers of Wisconsin! If, throughout this argument, I have been so fortunate as to express your convictions, and if your judgment is with me on the topic of the scientific preparation of the young farmer for his great vocation, it is pertinent to inquire, in conclusion, whether it is not in your power, so to mould and to fashion the system of public instruction, as to embody and to realize the idea, so vitally important to the agriculture of the State.

The educational organism for Wisconsin, as I understand it, comprises: 1. The District school, carrying elementary instruction into every neighborhood in the State.—2. One Academic, or Union school for each township.—And 3. The University. The organic law of the University of Wisconsin, provides for the the establishment of the several Departments, 1. of "Science, Literature, and Arts"—2. of "Medicine"—3. of "Law"—and 4. of the "Theory and practice of Elementary instruction."

The Regents of the University propose to add a Department of the "Applications of Science to Agriculture and the Useful Arts;" to go into effect whenever the means shall be provided for the support of the Professor, the purchase of Apparatus, and the ground necessary for a model farm.

Such a Department, suitably endowed by the State, would offer to the young men of Wisconsin, the future cultivators of the soil, without charge, a full course of instruction in the theory and practice of Agriculture; and the working of the model farm would defray, in part, the expenses of residence.

The pupils in this Department of the Philosophy of Agriculture and the Useful Arts, would have free access to the library of the University, to the collections of the various branches of Natural Science, and, in connexion with the regular classes, to the lecture rooms of the Professors of the other Departments, whether collegiate or professional.

From such conditions of culture the young farmer will go forth to his work, with juster views of the relations of the sciences to the arts, and of the arts to each other—he will find all remains of the middle wall between Agriculture and the Professions removed, his social position more fairly adjusted, his industrial agency more effective, better appreciated, and more amply rewarded.

But this is not all. The instructors of the Academic or Union Schools, should go from the University to their task, not only with the learning of the Normal Department, but well versed in the instructions of the Department of applied science.

Such an educational system is now offered to the farmers of Wisconsin.

Are you, then, prepared to endow in your University, for your own benefit, a Department of the "Applications of Science to Agriculture and the Useful Arts?" If so, your bounty will prove to be good seed, falling on good ground, springing up and bearing fruit, thirty, sixty, an hundred fold.

It is a fact of world wide celebrity, that Wisconsin presents to the settler the physical elements of prosperity, in rich profusion, and in beautiful combination.

With its soil and climate unsurpassed—with its capacity for rapid settlement and early maturity—with its continued alternations, in just proportion, of woodland and opening, of prairie, natural meadow, and lake—and with the command of both the Eastern and Southern markets, it needs but the means of professional culture, thus carried to the door of the farmer, through the system of Public Instruction, to finish what nature has so tastefully and so bounteously begun.

Bring, then, the educational agencies of the State into harmony with the great objects of your Association: follow up the auspicious beginnings of this day with ample provision for general professional culture, and you will leave an inheritance to your children, transcending all that you have felt or fancied of the destiny of Wisconsin.

Education, Gentlemen, is no mendicant. It begs nothing from your charity. Its proclamation to you is, "Give, and it shall be given to you again; good measure, pressed down, and shaken together, and running over, shall be returned into your bosom."

FIRST ANNUAL CATTLE SHOW AND FAIR.

The Premium List and List of Entries for the First Annual Cattle Show and Fair are inserted in this volume as a part of the History of the Society, and as something which may be of interest to the members of the Society in future years.

No specific sums were named as Premiums, inasmuch as the Society was entirely destitute of funds at the time of the publication of the premium list, and as it was wholly uncertain what amount would be realized from its members and from receipts at the Fair—these being the only sources of revenue to the Society.

LIST OF PREMIUMS.

CLASS A.

No. 1.—SHORT HORNS.	Contingent.
Best Bull over three years old	"
" Second do	"
" Third do	"
" Bull under three years old	"
" Second do	"
" Third do	"
" Bull Calf	"
" Cow over three years old	"
" Second do	"
" Third do	"
" Cow under three years old	"
" Second do	"
" Third do	"
" Heifer Calf	"

No. 2.—DEVONS.	
Best Bull over three years old	"
" Second do	"
" Third do	"
" Bull under three years old	"
" Second do	"
" Third do	"
" Bull Calf	"
" Cow over three years old	"
" Second do	"
" Third do	"
" Cow under three years old	"
" Second do	"
" Third do	"
" Heifer Calf	"

No. 3.—HEREFORDS. Contingent.

Best Bull over three years old..... "
" Second do..... "
" Third do..... "
" Bull under three years old..... "
" Second do..... "
" Third do..... "
" Bull Calf..... "
" Cow over three years old..... "
" Second do..... "
" Third do..... "
" Cow under three years old..... "
" Second do..... "
" Third do..... "
" Heifer Calf..... "

No. 4.—AYRSHYRES.

Best Bull over three years old..... "
" Second do..... "
" Third do..... "
" Bull under three years old..... "
" Second do..... "
" Third do..... "
" Bull Calf..... "
" Cow over three years old..... "
" Second do..... "
" Third do..... "
" Cow under three years old..... "
" Second do..... "
" Third do..... "
" Heifer Calf..... "

No. 5.—NATIVES AND CROSSES.

Best Bull over three years old..... "
" Second do..... "
" Third do..... "
" Bull under three years old..... "
" Second do..... "
" Third do..... "
" Bull Calf..... "
" Cow over three years old..... "
" Second do..... "
" Third do..... "
" Cow under three years old..... "
" Second do..... "
" Third do..... "
" Heifer Calf..... "

No. 6.—WORKING OXEN. Contingent.

Best yoke of Oxen over four years old..... "
" Second do..... "
" Third do..... "
" Yoke of Steers over two years old..... "
" Second do..... "
" Third do..... "

No. 7.—MILCH COWS.

Best Milch Cow..... "
" Second do..... "
" Third do..... "

No. 8.—FAT CATTLE.

Best Fat Cow over four years old..... "
" Second do..... "
" Third do..... "
" Fat Cow under four years old..... "
" Second do..... "
" Third do..... "
" Fat Heifer..... "
" Pair of Fat Oxen over four years old..... "
" Second do..... "
" Third do..... "
" Fat Single Ox over four years old..... "
" Second do..... "
" Third do..... "
" Best Pair of Fat Steers under four years old..... "
" Second do..... "
" Third do..... "
" Single Fat Steer under four years old..... "
" Second do..... "
" Third do..... "

No. 9.—FAT SHEEP.

Best Fat Sheep over two years old..... "
" Second do..... "
" Third do..... "
" Fat Sheep under two years old..... "
" Second do..... "
" Third do..... "
" Fat Lambs..... "

No. 10.—HORSES.

Best Stallion four years old and over..... "
" Second do..... "
" Third do..... "

No. 10.—HORSES.—Continued. Contingent.

Best Stallion three years old..... "
" Second do..... "
" Third do..... "
" Stallion two years old..... "
" Second do..... "
" Third do..... "
" Stallion Colt one year old..... "
" Brood Mare four years old and over..... "
" Second do..... "
" Third do..... "
" Brood Mare three years old..... "
" Second do..... "
" Third do..... "
" Brood Mare two years old..... "
" Second do..... "
" Third do..... "
" Mare Colt one year old..... "

No. 11.—MATCHED HORSES.

Best Pair of Matched Horses..... "
" Second do..... "
" Third do..... "
" Pair of Draught Horses..... "
" Second do..... "
" Third do..... "

No. 12.—GELDINGS.

Best Gelding four years old and over..... "
" Second do..... "
" Third do..... "
" Gelding three years old..... "
" Second do..... "
" Third do..... "
" Gelding under three years old..... "
" Second do..... "
" Third do..... "

No. 13.—SHEEP.—LONG WOOLED.

Best Buck over two years old..... "
" Second do..... "
" Third do..... "
" Buck under two years old..... "
" Second do..... "
" Third do..... "
" Ewe over two years old..... "
" Second do..... "
" Third do..... "

No. 13.—SHEEP.—LONG WOOLED.—Continued. Contingent.

" Ewe under two years old..... "
" Second do..... "
" Third do..... "
" Buck Lamb..... "
" Ewe Lamb..... "

No. 14.—SHEEP.—MIDDLE WOOLED.

Best Buck over two years old..... "
" Second do..... "
" Third do..... "
" Buck under two years old..... "
" Second do..... "
" Third do..... "
" Ewe over two years old..... "
" Second do..... "
" Third do..... "
" Ewe under two years old..... "
" Second do..... "
" Third do..... "
" Buck Lamb..... "
" Ewe Lamb..... "

No. 15.—SHEEP.—MERINOES.

Best Buck over two years old..... "
" Second do..... "
" Third do..... "
" Buck under two years old..... "
" Second do..... "
" Third do..... "
" Ewe over two years old..... "
" Second do..... "
" Third do..... "
" Ewe under two years old..... "
" Second do..... "
" Third do..... "
" Buck Lamb..... "
" Ewe Lamb..... "

No. 16.—SHEEP.—SAXONS.

Best Buck over two years old..... "
" Second do..... "
" Third do..... "
" Buck under two years old..... "
" Second do..... "
" Third do..... "

No. 16.—SHEEP.—SAXONS.—Continued. Contingent.

" Ewe over two years old.....
" Second do.....
" Third do.....
" Ewe under two years old.....
" Second do.....
" Third do.....
" Buck Lamb.....
" Ewe Lamb.....

No. 17.—SHEEP.—PAULAR MERINOES.

Best Buck over two years old.....
" Second do.....
" Third do.....
" Buck under two years old.....
" Second do.....
" Third, do.....
" Ewe over two years old.....
' Second do.....
" Third do.....
" Ewe under two years old.....
" Second do.....
" Third do.....
" Buck Lamb.....
" Ewe Lamb.....

SHEPHERD'S DOGS.

Best Shepherd's Dog.—[Evidence to be furnished of the thorough training of the Dog—otherwise no premium will be granted].....

No. 18.—SHEEP.—CROSS BREED.

Best Buck over two years old.....
" Second do.....
" Third do.....
" Buck under two years old.....
" Second do.....
" Third do.....
" Ewe over two years old.....
" Second do.....
" Third do.....
" Ewe under two years old.....
" Second do.....
" Third do.....
" Buck Lamb.....
" Ewe Lamb.....

No. 19.—SWINE. Contingent.

Best Boar over two years old ..... "
" Second do. ..... "
" Third do. ..... "
" Boar under two years old ..... "
" Second do. ..... "
" Third do. ..... "
" Sow over two years old ..... "
" Second do. ..... "
" Third do. ..... "
" Sow under two years old ..... "
" Second do. ..... "
" Third do. ..... "
" Lot of Pigs under 10 months old ..... "

No. 20.—POULTRY.

Best Lot of Poultry—not less than six of each kind ..... "

CLASS B.

No. 21.—FARM IMPLEMENTS.

Best Farm Waggon ..... "
" Plough ..... "
" Harrow ..... "
" Corn Cultivator ..... "
" Fanning Mill ..... "
" Corn Stalk Cutter ..... "
" Horse Cart for Farm ..... "
" Ox Cart ..... "
" Horse Rake ..... "
" Ox Rake ..... "
" Common Harness ..... "
" Carriage ..... "
" Churn ..... "
" Cheese Press ..... "

☞ Milk Pans, Grain Cradles, Hand Rakes, Hay Forks, Scythes, Manure Forks, Grain Measures, Brooms, and all other Farming Implements and Household Utensils—best of each ..... "

Horse Power, Thresher, Reapers, Grain Drill, Corn Sheller, Seed Planter—best of each ..... "

No. 22.—DAIRY.

Best Lot of Butter ..... "
" Second do. ..... "
" Third do. ..... "
" Cheese ..... "
" Second do. ..... "
" Third do. ..... "
" Butter Firkins and Butter Tubs ..... "

No. 23.—GRAINS, SUGAR, HONEY, AND VEGETABLES. Contingent.

Best Samples of Winter Wheat..... "
" Spring..... "
" Rye..... "
" Oats..... "
" Barley..... "
" Buckwheat..... "
" Indian Corn..... "
" Flax Seed..... "
" Broom Corn..... "
" Timothy, Clover, and other Grass Seeds..... "
" Maple Sugar..... "
" Honey..... "
" Kitchen and Table Vegetables..... "

No. 24.—FLOUR, &c.

Best Barrel of Flour..... "
" Sample of Corn Meal..... "

CLASS C.

No. 25.—DOMESTIC MANUFACTURES.

Silk, Woollen, and Cotton—embracing Carpets, Blankets, Flannels, Cloth, Stockings, Gloves, Mittens, Thread, and Clothing and Articles of Wearing Apparel—best Specimens of each..... "

No. 26.—ORNAMENTAL NEEDLE WORK.

Ottoman and Table Covers, Worsted Work, Lamp Stand Matts, Quilts, Shawls, Collars, Silk Bonnets, Straw Bonnets, Handkerchiefs, Ornamental Shell Work and Wax Flowers—best Specimens of each..... "

No. 27.—FRUITS.

Apples, Pears, Peaches, Plums, Quinces, Grapes, and Melons—best Specimens of each..... "

No. 28.—FLOWERS.

Dahlias, Roses, Phloxes, Verbenas, German Asters, Pansies and Green-House Plants—best Specimens of each..... "

Best Hand Boquets *flat* and *round*, best Boquets, and best floral exhibition..... "

No. 29.—PAINTINGS, &c.

Oil and Water Color Paintings, and Daguerreotypes—best Specimens of each..... "

Pamphlet and Card Printing—best Specimens of each..... "

CLASS D.

	Contingent.
No. 30.—STOVES.	
Cooking, Box, and Parlor Stoves—best specimens of each.....	"
No. 31.—SILVER AND GOLD WARE, &c.	
Jewelry, Gold and Silver Ware, Britannia Ware, and Table and Pocket Cutlery—best exhibitions of each.....	"
No. 32.—MISCELLANEOUS AND DISCRETIONARY DEPARTMENT.	
This Department comprises all Articles manufactured of Metals, Wood, Leather, India Rubber, Cloth, Tin, &c. not heretofore enumerated...	"

Competition for the Premiums of the Society is open to all persons, whether residents of this State or not, provided they comply with the regulations of the Society.

The days selected for the exhibition are Wednesday and Thursday, the first and second days of October.

All persons intending to offer articles and animals for exhibition will be required to enter their names, and a list of the animals or articles to be exhibited, with the Secretary, on or before twelve o'clock M., on Wednesday, the first day of October.

Exhibitors must become Members of the Society before making their entries.

All articles and animals must be brought within the enclosure as early as two o'clock P. M. of the first day, in order that they may be suitably arranged.

The Ploughing Match will be held on the grounds eastward and adjacent to the Fair ground, on the second day of the Fair, at eight o'clock, A. M.

The Judges will meet at the Secretary's office at nine o'clock A. M. of the second day, in order to receive the books of entries and their instructions, after which they will immediately proceed to the discharge of the duties assigned them.

The Address will be delivered, at the Tent of the Society, at three o'clock P. M. of the second day; immediately after which the award of premiums will be read by the Secretary.

No person will be allowed to remove any article or animal from the grounds without first obtaining the consent of the President.

ALBERT C. INGHAM,
Secretary.

LIST OF ENTRIES FOR EXHIBITION.

CLASS A.

No. 1.—SHORT HORNS.

One Durham cow, over three years of age; one Durham heifer, under three years of age; two Durham heifer calves; one Durham bull, under three years of age; one Durham bull calf. D. B. Tears Alden, Ill.

One Durham calf. Samuel A. Thurston, Burlington.

One Durham calf. James Reynolds, Burlington.

One Durham bull, over three years of age. Ephraim Perkins, Dodge Center.

One bull calf. Sheldon C. Hall, Whitewater.

One Durham bull, over three years of age. James Freeman, Whitewater.

One Durham bull, over three years of age. H. W. Tallcott, Rockton.

No. 2.—DEVONS.

One Devon bull, over three years of age; two Devon heifers, under three years of age; one Devon cow, over three years of age; two Devon calves. D. B. Tears Alden, Ill.

One Devon bull, under three years of age. Benjamin Ferguson, Fox Lake.

One Devon cow, over three years of age; two Devon heifers, under three years of age; one Devon bull calf. Martin Webster, Fox Lake.

One Devon bull calf. Worden Matteson, Delavan.

5.—NATIVES AND CROSSES.

One yearling bull; two cows, four years of age; one bull calf.—Daniel F. Melendy, Palmyra.

One red bull (cross) over one year old. T. C. Denary, Beloit.

Three heifers (cross) under three years of age. Benjamin Ferguson, Fox Lake.

One bull (cross) over three years of age. A. W. Powers, Palmyra.

One bull calf (cross). Martin Webster, Fox Lake.

One bull calf (cross) six months old. Joseph Budd, Janesville.

One native cow and calf. H. H. Simonds, Janesville.

One native heifer, under three years of age; one bull calf. William McLoon, Janesville.

One native cow, over three years of age. E. K. Bingham, Koshkonong.
One bull calf; one heifer, over two years of age; one yearling steer. F. and J. Hitchcock, La Prairie.
One native bull calf. J. Cory, Bachelor's Grove.
One native cow. S. Antisdell, Janesville.

No. 6.—WORKING OXEN.

One yoke of oxen, over four years of age. H. H. Simonds, Janesville.
One yoke of oxen, over four years of age. L. D. Thompson, Janesville.
One yoke of oxen, over four years of age; one yoke of steers, over three years of age; one yoke of steers, over two years of age. F. and J. Hitchcock, La Prairie.
One yoke of oxen, over four years of age; one yoke of steers, over three years of age. Zenas Bigelow, Magnolia.

No. 7.—MILCH COWS.

Three milch cows. F. and J. Hitchcock, La Prairie.

No. 8.—FAT CATTLE.

One yoke of fat cattle. John M. Keep, Beloit.

No. 10.—HORSES.

One brood mare, over four years of age. Otis W. Norton, Janesville.
One brood mare, with foal at foot. H. K. Belding, Janesville.
One stallion, "Hambletonian," over four years of age. R. M. Wheeler, Janesville.
One grey horse, over four years of age. Addison Baker, Racine.
One mare colt, one year of age. T. P. Davis, Janesville.
Three brood mares. Jackman and Smith, Janesville.
One brood mare and colt. E. Wood Cornes, Whitewater.
One stallion, three years of age. C. L. Annis, Summit.
One pair of geldings, four years of age. J. B. Moon, Janesville.
One mare, seven years of age. D. C. Olin, Waukesha.
Three stallions, over four years of age; one stallion under three years of age; one brood mare over four years of age. Simon Ruble, Beloit.
One stallion, eight years of age. Andrew Aitkin, jr., Waukesha.
One stallion, over three years of age. D. Babcock, Johnstown.
One stallion, one year of age. N. P. Parsons, Whitewater.
One bay mare, "Jenny Lind," over three years of age. Simeon Mills, Madison.
One stallion, over three years of age; one filly, over one year of age. E. K. Bingham, Koshkonong.
One brood mare, seven years of age. C. C. Olin, Waukesha.

One stallion, over two years of age. Nelson Fryer, Whitewater.
One stallion, over two years of age. James Craig, Milton.
One brood mare and foal. A. Henderson, Beloit.
Two brood mares, over four years of age; one colt. James Helms, Center.
One stallion, over four years of age. L. D. Thompson, Janesville.
One mule colt. Jonathan Pound, Fulton.
One stallion, three years of age. H. W. Talcott, Rockton, Ill.
One mare. G. W. Balser, Palmyra.
One pair of draft horses. J. T. Smith, Milton.
Two brood mares, five and six years of age; two mules, three years of age; one jack, six years of age. H. Allen, Allens' Grove.
One brood mare, over four years of age; one mare two years of age. T. W. Williams, Emerald Grove.
One grey mare, over four years of age. E. F. Mabie, Delavan.
One brood mare, over four years of age. E. K. Bingham, Koshkonong.
Two brood mares, over three years of age. George O. Tiffany, Milwaukee.

No. 11.—MATCHED HORSES.

One pair of matched horses. J. P. Dickson, Janesville.
One pair of matched horses. Addison Baker, Racine.
One pair of matched horses. Elon Fuller, Waukesha.
One pair of matched horses. Philo Dunning, Madison.
One pair of matched horses. Jackman and Smith, Janesville.
One pair of matched horses. Edward Bain, Kenosha.
Four pair of draft horses. Simon Ruble, Beloit.
One pair of matched horses. B. H. Moon, Janesville.
One pair of matched horses. John Kent, Janesville.
One pair of matched horses. John Dates, Beloit.
One pair of matched stallions. William Douglass, York.

No. 12.—GELDINGS.

One gelding, over four years of age. D. B. Tears, Alden, Ill.
One brown gelding, over four years of age. T. Stevens, Racine.
One bay gelding, over four years of age. P. W. Dickey, Janesville.
One bay gelding, over three years of age. E. B. Fargo, Lake Mills.
One gelding over three years of age; one gelding over two years of age. A. Henderson, Beloit.
One gelding over four years of age. G. W. Balser, Palmyra.
One bay gelding, over four years of age. E. A. Howland, Janesville.

No. 13.—LONG WOOL SHEEP.

Seven Bakewell sheep, under two years of age; one ram; two ewes, and four lambs. Charles Wardale, Union.

No. 14.—MIDDLE WOOL SHEEP.

Two Southdown ewes, under one year of age. N. B. Clapp, Kenosha.

One Leicester ram, over four years of age. H. S. Harrison, Mukwanago.

No. 15.—MERINO SHEEP.

Thirty-seven Merino bucks, under two years of age. Edward Bain, Kenosha.

Two Merino bucks, over two years of age. Andrew Palmer, Janesville.

One Merino buck, under two years of age; one Merino buck, over two years of age; six Merino ewes, over two years of age. T. W. Williams, Emerald Grove.

Four Merino sheep, over two years of age. W. P. Benson, Fort Atkinson.

No. 16.—SAXON SHEEP.

One Saxon ewe lamb; one Saxon buck lamb. N. B. Clapp, Kenosha.

One Saxon buck, over two years old. T. W. Williams, Emerald Grove.

Six Saxony bucks; one Saxon ewe over two years of age; one Saxon ewe under two years of age; one Saxon buck lamb. N. B. Clapp, Kenosha.

No. 17.—PAULAR MERINOES.

Six paular merino bucks, over two years old; one paular merino lamb. E. W. Drury, Fond du Lac.

One paular merino buck lamb. John A. Fletcher, Johnstown.

No. 18.—CROSS BREED SHEEP.

Three yearling bucks; two buck lambs; three yearling ewes; three ewe lambs; thirty sheep—all from cross breeding. J. Roberts, Janesville.

No. 19.—SWINE.

One sow and pigs. P. W. Dickey, Janesville.

One sow and pigs. A. Haskins, Janesville.

One boar under two years old. Alva Blackman, Johnstown.

One barrow hog, three years old F. and J. Hitchcock, La Prairie.

One Berkshire boar, over one year old. C. C. Cheney, Janesville.

One boar pig, over ten months old—(Byfield); one boar pig, under ten months old—(Leicester.) A. A. Gifford, Johnstown.

One sow, and pigs three weeks old. E. A. Howland, Janesville.
One Neapoliton pig, ten months old. A. J. Luckey, Bradford.
One sow and three pigs. David Mills, Union.

No. 21.—FARM IMPLEMENTS.

One reaping machine; one seed drill. H. K. Belding, Janesville.
One fanning mill. Thomas Shaw, Janesville.
One 1 horse open carriage; one 2 horse open carriage and harness. Addison Baker, Racine.
One thrashing machine jack. Joshua Davis, Kenosha.
One double carriage harness; one single carriage harness; one double team harness. George Dyer, Milwaukee.
One fanning mill. Ludim Crouch, Waukesha.
One corn sheller. N. B. Gaston, Beloit.
One corn sheller. Joshua Davis, Kenosha.
One grain separator. George B. Turner, Ohio.
Two boxes Crane's soap. E. D. Ladd, Milwaukee.
Assortments of wire screnery; one Grimm's smut machine. S. S. Dagget, Milwaukee.
One Empire straw cutter. John Covell, Milwaukee.
One lever thrashing machine; one tread thrashing machine. J. J. Case, Racine.
One pair of draft collars. N. S. Woodruff, Janesville.
One 1 horse power thrashing machine. Marvin Hughes, Kenosha.
Three hay forks. —— Keyes, Watertown.
Eight ploughs. Sherman, Green and Foss, Watertown.
One McCormick's reaper; one Dickey's fanning mill; one Whitney's corn grinder; one corn sheller. A. P. Dickey, Racine.
Two badger reapers. Barker and Love, Beloit.
One fanning mill. George A. Stiles, Beloit.
One churn. George W. Yearly, Mukwanago.
One buggy waggon. Jackman and Smith, Janesville.
One grain scythe; one grass scythe; one hay knife; one straw fork; one manure fork. Adam E. Ray, Troy.
Seven ploughs; two cultivators; two harrows; one sett of harrow teeth; one hay cutter; one corn sheller; two churns. Thompson Littell, Milwaukee.
One cast iron plough. J. W. Spencer, Watertown.
One smut machine. S. B. Newcomb, Madison.
One Hall's patent churn; one Colby's corn drill. S. D. Baldwin, Adrian, Mich.

One scientific planter. Henry Ingalls, Ellicottville, N. Y.

Two setts of double harness; one thrashing machine; one horse power; one straw cutter; one shaking fork; one hand rake; one sausage meat cutter. Simon Ruble, Beloit.

One flax puller. S. B. Goss, Newark.

One thrashing machine ; one horse power. Charles Gifford, Milwaukee.

One fanning mill; George A. Stiles, Beloit.

One sett of diamond harrows. David Henderson, Johnstown.

One buggy, and one sett of steel springs. S. H. Hurd, Watertown.

One grain cradle. M. W. Hammond, Clinton.

Hoes; garden rake; corn cutter; butcher knives; grain sycle, &c. &c. Parker and Stone, Beloit.

Seven steel ploughs; four breaking ploughs. J. M. May, Janesville.

One straw cutter. A. Henderson, Beloit.

One dozen brooms. William Mulks, Whitewater.

One gang plough. H. Allen, Allen's Grove.

One cast steel plough; one three-horse evener. Simon Ruble, Beloit.

One 1 horse carriage. E. A. Howland, Janesville.

One portable mill. Miles Millard, Lake Mills.

No. 22.—DAIRY.

Five pounds of butter. H. K. Belding, Janesville.

Two kegs of butter; thirty pounds of new butter. Hugh Jehu, Harmony.

Four cheeses. Samuel A. Thurston, Burlington.

Six cheeses. H. M. Allen, Union.

Three cheeses. Stephen Faville, Milford.

One sample of butter. M. P. Maine, Osborn.

One sample of butter. J. Cory, Bachelor's Grove.

No. 23.—GRAIN, &c.

Half bushel of tomatoes. H. K. Belding, Janesville.

One peck Hutchinson wheat. Allen O. T. Breed, Milwaukee.

Three bushels of winter wheat. N. P. Bump, Janesville.

One squash. E. C. Hull, Madison.

One bee-hive. T. McElhenny, Beloit.

Sample of timothy and clover. A. Henderson, Beloit.

Samples of broom corn—five acres grown; sweet potatoes. Jonathan Pound, Fulton.

Samples of hops—four acres grown. S. Antisdale, Beloit.

No. 24.—FLOUR AND CORN MEAL.

Two gallons of hominy. Williams and Noland, Madison.
One barrel of flour. Jackman and Smith, Janesville.
One barrel of flour. Strausberger and Co., Janesville.
One barrel of flour. B. A. Jenkins, Genesee.

No. 25.—DOMESTIC MANUFACTURES.

Thirteen yards of white flannel; one bunch of stocking yarn; one pair of wool stockings. H. M. Allen, Union.
One piece of black doeskin; one piece of striped doeskin. P. Judson, Kenosha.
Two coverlids; one pound of stocking yarn; one pound of linen thread; one pair of wool stockings; one pair of men's wool socks; one pair of silk stockings; five yards of linen diaper; ten yards of linen kersey; one woollen blanket; one kersey blanket; one bed blanket. W. Matteson, Delavan.

No. 26.—ORNAMENTAL NEEDLE WORK.

One pair of ottoman covers; one pair of cricket covers. Miss E. H. Langdon, Milwaukee.
One fancy glass box. R. M. Wheeler, Janesville.
One pair of lamp matts. E. B. Dean, jr., Madison.
One coverlid; two quilts. J. R. Millard, Janesville.
Odd Fellows' regalia. Samuel Gardiner, jr., Milwaukee.
One ottoman cover. P. W. Dicky, Janesville.
Two lamp matts. John Fearnly, Adams.
One table cover; one ottoman cover. Mrs. F. Wardner, Milwaukee.
One stand cover; one lamp matt. A. M. Kanouse, Madison.
One table spread. J. D. Brown, Janesville.
One pair stockings; one lace cap; two ottoman covers. Mrs. A. Henderson, Beloit.
One bed quilt. F. Hitchcock, La Prairie.
One chair tidy; one stand cover; one rug. E. H. Morse, Richmond.
One patch quilt. Robert H. Grace, Janesville.
One quilt. Mrs. W. Hughes, Janesville.

No. 27.—FRUITS.

One fall pippin. N. B. Clapp, Kenosha.
One plate of fruit. Charles Gifford, Milwaukee.
Thirty varieties of apples and pears. S. P. Beecher, Milwaukee.
One Ripston pippin. J. W. Parker, Milwaukee.

Selection of apples, pears and plums. J. C. Howard, Milwaukee.
One box of fruits. P. M. Perkins, Burlington.
Selections of apples. E. B. Quiner, Watertown.
Thirty-five varieties of apples; three of pears; two of grapes. F. K. Phœnix, Delavan.
Two fall pippins. Cyrus Hawley, Milwaukee.
One lot of fruit. H. Ludington, Milwaukee.
Varieties of peaches. George O. Tiffany, Milwaukee.
One bunch of Isabella grapes. A. D. Mitchell, Janesville.
One variety of grapes, and one of apples. W. Talcott, Rockton.
Varieties of apples. J. Roberts, Janesville.

It is much to be regretted that the names of the several varieties of fruit exhibited were not given.

No. 28.—FLOWERS.

One flat boquet—pansies, dahlias, &c.; large floral ornament. Charles Gifford, Milwaukee.
One phlox boquet—flat; one mixed flowers—flat; one mixed flowers—round; one hand boquet. S. P. Beecher, Milwaukee.
Dahlias and roses. J. W. Parker, Milwaukee.
Twenty varieties of dahlias; five of phloxes. F. K. Phœnix, Delavan.

No. 29.—PAINTING, &c.

Specimens of card printing. B. B. Cary, Milwaukee.
Specimens of Daguerreotype. Stamm and Upmann, Milwaukee.
Specimens of printing and cards. Charles S. Hurley, Milwaukee.
Specimens of book and card printing. Rufus King, Milwaukee.
Specimens of card printing. E. Starr, Milwaukee.
One water color painting. Miss H. Brace, Janesville.
One water color painting. Miss Jane Goodrich, Milton.
One oil painting. Oliver S. Clayton, Beloit.
Four landscape drawings; one water color painting. Miss Olive Ketchell, Janesville.

No. 30.—STOVES.

One economist cooking stove. James Seville, Milwaukee.

No. 31.—GOLD AND SILVER WARE, &c.

One show case of watches; gold and silver fancy articles. A. B. Van Cott, Racine.
One case of jewelry. S. Gardiner, jun. Milwaukee.
An assortment of jewelry. J. R. Treat, Milwaukee.

No. 32.—MISCELLANEOUS ARTICLES.

One case of surgical instruments; one case of fancy articles. W. W. Holden, Janesville.

One Harper's Bible; assortment of blank books—specimens of binding. Sidney L. Rood, Milwaukee.

Assortment of fancy books. J. Morrison, Racine.

Supporter and shoulder braces. Dr. Whiton, Chicago.

Platform and balance scales. N. B. Gaston, Beloit.

One case of clocks. J. W. Stillman, Milwaukee.

Osage orange plants and seed. E. H. Mason, Ill.

Blank books. Weed and Eberhard, Madison.

Williams and Noland's "Tricopherous." Williams and Noland, Madison.

One hand drill; one circular saw. Barker and Love, Beloit.

Specimens of dressed flax. John Galbraith, Mukwonego.

Two platform scales; one grocer's scales. E. Fairbanks, St. Johnsbury, Vt.

Six hammers; two hydraulic rams; one sett pipe boxes; one sett brass bands; one axletree; one pair of tailor's shears; four drawing knives; one plough plane. Henry J. Nazro, Milwaukee.

Two copper coffee urns. H. K. Edgerton, Milwaukee.

One door sash and blind; one cherry window sash. Philo Doty, Janesville.

One box of saleratus. Charles Y. Reed, Oconomowoc.

One walking stick. William Tweeddle, Waukesha.

Two flour barrels. Jesse Wright, Hebron.

Window blind fastener. S. B. Cooper, Beloit.

Specimen of penmanship. N. V. Bennett, Janesville.

One rotary fire engine; one sash lock; one plough making machine. J. M. May, Janesville.

One centre table. Levi Moses, Janesville.

Sawed and cut stone; specimens of turning. George W. Taylor, Rock.

One music box and guitar. A. B. Van Cott, Racine.

Apparatus for drawing water from wells. J. S. Linderman, Manchester, Ill.

One lot of furniture. Levi Moses, Janesville.

Three fancy baskets. Miss E. Thompson, Janesville.

Two setts of carriage gearing. P. Flickner, Delavan.

One box of confectionery. Edward Emery, Milwaukee.

Specimens of engraving on brass and steel. P. L. Mossin, Milwaukee.

One box of saleratus. E. D. Holton, Milwaukee.

REPORTS OF COMMITTEES AND AWARDS OF PREMIUMS

Made at the First Annual Fair of the Society, held at Janesville, October 1st and 2d, A. D. 1851.

STOCK.

SHORT HORNS.—No. of Entries, 12.

Judges—John Fearnly, Adams; Thomas R. Roddis, Milwaukee; Benjamin Ferguson, Waushara; and Isaac M. Norton, Janesville.

Best bull over three years of age; Ephraim Perkins, Dodge Center. Diploma.
Best bull under three years of age; D. B. Tears, Alden, Ill. Diploma.
Best bull calf; Samuel A. Thurston, Burlington. Diploma.
Best cow over three years of age; D. B. Tears, Alden, Ill. Diploma.
Best cow under three years of age; D. B. Tears, Alden, Ill. Diploma.

D. B. Tears' Statement:

Alden, Ill., December 29th, 1851.

Dear Sir—Your letter of December 1st, requesting a statement of my manner of raising neat cattle, the method of feeding and keeping, the breeds I prefer, &c., was duly received. I have but just commenced the raising of stock, and my opinion may not, perhaps, be worth as much as that of one who has had more experience; but the little I know will be willingly communicated. Had I been longer in the business, I might have been able to benefit others more.

My manner of raising stock, does not probably differ materially from that of the majority of stock raisers.

The importance of keeping stock distinct and unadulterated, cannot be over-estimated. The birth of the animal, and the name of its ancestors, to the remotest generation, should be put down in a register kept for the purpose.

Calves are weaned at four months old. I prefer having them come in April or May. Cows should be treated very kindly.

In this country there is no difficulty or trouble in taking care of stock; in the summer they will provide for themselves—but in winter they will require warm sheds, and an ample supply of provender. As to the manner of feeding: I feed my cattle three times a day in winter. Beets and carrots are better than grain. If grain is fed it should be ground. Cows giving milk, should be fed twice a day with bran or ground feed.

Bulls and working oxen require a little grain in winter. Salt is kept in troughs in my yards or fields where the cattle can have access to it. Care should be taken in winter that cattle are not kept too much confined; they require plenty of fresh air, and it costs nothing.

For working oxen, I prefer the Devons; they are livelier, and will endure more than any other kind, to say nothing of their beauty, which, to an admirer of matched teams, is an important consideration.

For milch cows it is, I believe, universally acknowledged that the Durhams are superior to any other breed; I know very little about other improved breeds, but from the best information I can obtain, I believe that the Devons and Durhams are the best for this country.

Yours very truly,

To Albert C. Ingham, Esq. D. B. TEARS.

Madison, Wis.

DEVONS.—No. of Entries, 12.

Judges.—Ephraim Perkins, Dodge Centre; Pliny M. Perkins, Burlington; Abel Dunning, Madison; Timothy Jackman, Janesville; and H. Johnson, Kenosha.

Best bull over three years of age; D. B. Tears, Alden, Ill. Diploma.
Best bull under three years of age; Benjamin Ferguson, Waushara. Diploma.
Best bull calf; D. B. Tears, Alden, Ill. Diploma.
Third best bull calf; Worden Matteson, Delavan. $1.
Best cow over three years of age; D. B. Tears, Alden, Ill. Diploma.
Second best cow over three years of age; Martin Webster, Waushara. Diploma.
Best cow under three years of age; D. B. Tears, Alden, Ill. Diploma.
Best heifer calf; Martin Webster, Waushara. Diploma.

NATIVES AND CROSSES.—No. of Entries, 19.

Judges.—J. C. Howard, Milwaukee; O. G. Ewings, La Grange; H. Rublee, Beloit; N. P. Parsons, Whitewater; and A. P. Dickey, Racine.

Best bull over three years of age; A. W. Powers, Palmyra. Diploma.
Best bull under three years of age; T. C. Denary, Beloit. Diploma.
Second best bull under three years of age; Daniel F. Melendy, Palmyra. $1.
Best bull calf; Daniel F. Melendy, Palmyra. Diploma.
Second best bull calf; Daniel F. Melendy, Palmyra. $1.
Best cow over three years of age; E. K. Bingham, Koshkonong. Diploma.
Second best cow over three years of age; E. K. Bingham, Koshkonong. $1.

Best cow under three years of age; F. and J. Hitchcock, La Prairie. Diploma.
Second best cow under three years of age; Benjamin Ferguson, Waushara. $1.

WORKING OXEN.—No. of Entries, 7.

Judges.—Martin Webster, Waushara; Joseph Goodrich, Milton; Daniel F. Melendy, Palmyra; S. G. Colley, Beloit; and P. M. Perkins, Burlington.

Best yoke over four years of age; H. H. Simons, Janesville. Diploma.
Second best yoke over four years of age; F. and J. Hitchcock, La Prairie. $3.
Best yoke of steers three years of age; F. and J. Hitchcock, La Prairie. Diploma.
Second best yoke of steers three years of age; Zenas Bigelow, Magnolia. $2.
Best yoke of steers two years of age; F. and J. Hitchcock, La Prairie. Diploma.

MILCH COWS.—No. of Entries, 1.

Judges.—Samuel A. Thurston, Burlington; Thomas P. Turner, Eagle; Chas. C. Cheney, La Prairie; T. C. Richardson, Harmony; and J. Milton May, Janesville.

Second best cow; F. and J. Hitchcock, La Prairie. $1

The Committee regret that there was no competition for the Premium in this class of stock. The cow entered by the Messrs. Hitchcock, they regard as a very fair specimen of the native breed of cows; yet they think that many far superior might be found in the immediate vicinity of Janesville.

FAT CATTLE.—No. of Entries, 1.

Judges.—Samuel A. Thurston, Burlington; Thomas P. Turner, Eagle; Chas. C. Cheney, La Prairie; H. Richardson, Janesville; and J. Milton May, Janesville.

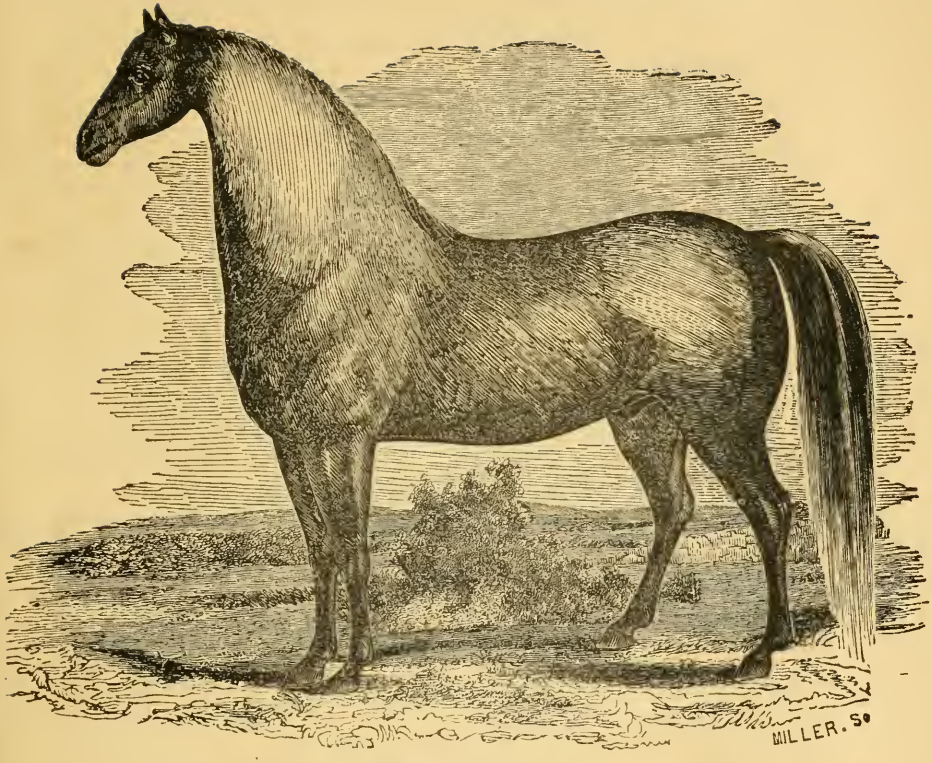
Best yoke of oxen; John M. Keep, Beloit. Diploma.

The Committee, while they regret the lack of competition, take pleasure in saying that Mr. Keep's yoke of fat oxen are perfect for their class.

HORSES.—STALLIONS AND BROOD MARES.—No. of Entries, 46.

Judges.—Henry M. Billings, Highland; Joel P. Mann, Madison; C. C. Olin, Waukesha; A. W. Parsons, Summit; and David Williams, Geneva.

Best stallion over four years of age; R. M. Wheeler, Janesville. Diploma.



HAMBLETONIAN;

The property of R. M. Wheeler, Janesville.

The first premium was awarded to HAMBLETONIAN, at the fair of the Wisconsin State Agricultural Society, held at Janesville, 1851.

Engraved and printed at the office of the Wisconsin Farmer, Janesville.

All who were present at the late Fair of this Society are doubtless familiar with the appearance of this horse; his pedigree may be seen by the following letter addressed to his owner, R. M. Wheeler, Esq. of Janesville:

SHELBURNE, VT. August 20th, 1850.

DEAR SIR:—I hasten to answer your request to furnish you with the pedigree of your horse "Hambletonian," so far as relates to his *sire*, which I have carefully gathered for a number of years. It is so difficult to trace the pedigree of stock, after it arrives from foreign countries, on both sides, that I shall only give you the descent on the side of the *sire;* yet your horse shows some points superior to his sire as regards bone and sinew, which, no doubt, are acquired through his dam "Messenger Kate." Your horse is descended as follows: 1700, Darley's Arabian; 1716, Bartlet's Childers; 1732, Squirt; 1750, Marsk; 1764, Eclipse; 1775, King Fergus; 1803, White Lock; 1814, Black Lock; 1826, Voltaire; 1835, "Imported Hambletonian;" 1843, by young Hamiltonian, out of a mare by Brutus, that I purchased in Boston, Mass.

The dam of your horse is Messenger Kate, well known in these parts for her great speed and strength. Up to this time there has only one horse, half-brother to yours, been put through training, which resulted in the following manner in private: while green he trotted his mile in 2.40, was sold for $500; taken to Boston by Mr. Benton, and after thorough training accomplished his mile in 2.26, was there sold for $3,000. I could give you much other information in regard to their speed, but your horse cannot help but speak for himself.

Yours truly,

USUAL PERSONS.

To Mr. R. M. WHEELER.

Second best stallion over four years of age—brown; Andrew Aitkin, jr., Waukesha. Diploma.

Third best stallion over four years of age—chestnut sorrell; Simon Rublee, Beloit. $5.

Best stallion three years old; C. L. Annis, Summit. Diploma.

There were two others three years of age, but the committee did not think them worthy of a premium.

Best stallion two years of age; Simon Rublee, Beloit. Diploma.

Second best stallion two years of age; James Craig, Milton. $5.

Third best stallion two years of age; Nelson Fryer, Whitewater. $3.

Best one year old stallion colt; N. P. Parsons, Whitewater. Diploma.

Best brood mare over four years of age—grey; E. F. Mabie, Delavan. Diploma.

Second best brood mare over four years of age; George O. Tiffany, Milwaukee. $5.

Third best brood mare over four years of age—brown; E. W. Cornes, Whitewater. $4.

Best brood mare (Jenny Lind) three years of age—dark bay; Simeon Mills, Madison. Diploma.

Second best brood mare three years of age—bay; G. W. Balser, Palmyra. $4.

Best brood mare two years of age; T. W. Williams, Emerald Grove. $4.

Third best mare colt one year of age; T. P. Davis, Janesville. $3.

MATCHED AND DRAUGHT HORSES.—No. of Entries, 14.

Judges.—N. B. Clapp, Kenosha; George O. Tiffany, Milwaukee; J. A. Paine, Madison; Martin Field, Mukwanago; W. P. Burroughs, Janesville.

Best pair of matched horses—dapple greys; Addison Baker, Racine. Diploma.

Second best pair of matched horses—light greys; Edward Bain, Kenosha. Diploma.

Third best pair of matched horses—black mares; John Kent, Janesville. $5.

Best pair of draught horses—grey stallions; William Douglass, York. Diploma.

Second best pair of draught horses—bay geldings; J. B. Moon, Janesville. Diploma.

Third best pair of draught horses—sorrel mares; Elon Fuller, Waukesha. $5.

All of the horses presented to the inspection of the Committee were excellent, both as to quality and appearance. They were not only an honor to Wisconsin, but would have commanded admiration in any Eastern State. In the opinion of the Committee they were of a better character than any other new State can produce—every pair was worthy of a premium had not better ones been presented.

GELDINGS.—No. of Entries, 8.

Judges.—Wm. H. Fox, Madison; H. M. Allen, Union; James M. Hawkins, Waupun; Harvey Brace, Janesville.

Best gelding over four years of age; T. Stevens, Racine. Diploma.

Second best gelding over four years of age; D. B. Tears, Alden, Ill. Diploma.

Third best gelding over four years of age; P. W. Dickey, Janesville. $5.

Best gelding over three years of age; E. B. Fargo, Lake Mills. Diploma.

Second best gelding over three years of age; A. Henderson, Beloit. $5.

Remarks on the Breeding of Horses by W. H. Fox, Chairman of the Committee:

GREENFIELD, DANE CO., WIS., Dec. 29th, 1851.

DEAR SIR—At the late Fair of our State Society held at Janesville, the short space of time allotted to committees to make their reports, necessarily prevented any very lengthy remarks; were it otherwise, your committee on geldings would have accompanied their report, with some more extended observations. However as a member of that committee and a farmer, I would respectfully offer a few suggestions, which may possibly be of some benefit to a portion of our farming community. The raising of the horse and his application to labor, must always constitute one of the most important and interesting branches of agriculture; and already not a few of our farmers are beginning to turn their attention particularly to that business.

But it is very plain, even judging from some of the specimens exhibited at the fair, that most of our farmers breed without due regard to proper system, or to the class of animals most desirable for pleasure and profit. They seem to think that a mare rendered worthless by vicious habits, or disease, will do very well to raise a colt from, no matter if she is blind, spavined, ring-boned, or splinted, small-sized, or ill shaped—if they can only procure a good, large, fat horse for a sire.

This is a very bad system and ought to be eradicated. The great evil is, they pay too little attention to the kind of mare. Both animals ought to be perfect as near as we can judge and get them, or else our breed of horses will never be generally good, but a spurious race will continue, and degeneration progress. If breeders do not pay more attention to the hereditary transmission of disease; if we do not exercise proper judgment with regard to form, constitution, and freedom from hereditary taint, how can we expect a sound or healthy offspring from either sire or dam?

It is, therefore, very important that Agricultural Societies should have such judges as are competent and able to discover any hereditary tendency to disease or defect capable of being transmitted to the offspring.

If any disease or imperfection can be detected, such horses should then be declared unfit to propagate their species. The principal maladies in the horse, capable of being developed in their issue, sooner or later, are—all defective organizations, splints, spavins, ring-bones, curbs, tendency to contraction of the feet, and founder, also disease of the eyes and respiratory organs. Of this we have daily occular demonstration, together with the testimony of the best veterinary pathologists. The improvements which have taken place in the different breeds of animals, shows clearly how much we have under command, by judicious crossing, size, form, action, disposition, &c., and tendency to health or disease. Knowing all this, of what vital consequence it is to avoid all defects in animals

intended to breed from. Let us not forget the old saying "that like begets like;" and not continue to do as too many of us have done, year after year, breed from animals possessing the seeds of disease, and almost every bad quality, evident to the most casual observer. We should also give our especial attention to the breeding of such a class of horses as combine, in the greatest degree, the desirable qualities of power and speed—add to these, sufficient size, mettle, and docility of disposition, with proper symmetry of form, and compactness—strong, clean, hard bone, and tough hoof—and we have the most desirable horse for general business, and one that will always command a good price in any market. The muscles and tendons should be well developed, for the strength of an animal does not depend so much upon the size of the bones as on that of the muscles. Many animals with large bones are weak, their muscles being small. How much better for us to take pains and endeavor to raise good horses, than by carelessness to continue to inundate the country with deformed, diseased, worthless scrubs. It certainly costs as much, and even more, to raise poor, inferior animals, besides the mortification of having such a drug on our hands. The name "western horse," might be a passport to any market, if we would only pay sufficient attention to judicious selection in breeding.

It is true, it would be difficult to procure animals without some defect; but our aim should be onward, and we should make use of every reasonable exertion to select such as come nearest to the desirable standard.

The first and most important step towards improvement, is to select the right kind of mare, full of health and vigor. Youatt says it is more difficult to select a good mare to breed from, than a horse, because she should possess somewhat opposite qualities. In order to improve the form of the offspring, she should be proportionally larger than the stallion; her carcass should be rather long, to give room for the expansion of the fœtus—yet with compactness of form, and shortness of leg, chest rooomy, shoulders oblique and deep, withers well raised, girth large, loins broad, and quarters wide, shanks flat and clean. The muscles and their appendages (the tendons) cannot be too prominently developed in the brood mare; however desirable, or even perfect may have been the conformation of the sire, every good point may be neutralized or lost by the defective structure of the mare.

The essential points should be good in both parents, or any minor defect in either must be got rid of by excellence in that particular point in the other. The careless breeder too often so badly pairs the animals, that the good points of each are almost lost, the defects of both increased, and the produce is inferior to either sire or dam.

Another very bad practice, is that of breeding from young animals before nature is well developed in form, and every organ has acquired full maturity.

As to the stallion, it is a well established fact, that the cross between large, upright shouldered, overgrown horses and small mares, generally produce a race of long legged, small chested, spongy boned animals.

It is also a well established fact, that to obtain speed, courage, spirit and bottom, with hardness of bone, we must have what breeders call a strong dash of blood; and we should aim to get as much blood as we can into the horse of all-work, consistently with the necessary weight. However, in doing this we should avoid the long-legged, narrow-loined, pot-gutted, degenerate class of race horses, and endeavor to select such as are well formed, with sufficient bone, body and muscle, and shortness of leg, to enable them to bear up under long continued and severe exertion. Diomede, Sir Archy, Medley, and other far famed thorough breds, are said to have possessed these very desirable qualities in a pre-eminent degree, and transmitted them largely to their offspring.

It is said that Lee's celebrated legion, in the South, during the Revolution, chiefly owed its great efficiency to these qualities, and the prevalence of blood in his horses. They were remarkable for their wonderful endurance of hunger, thirst and fatigue, making them the terror and scourge of the enemy. According to the turf register, the blood of the Lindsay Arabian, once the property of the Emperor of Morocco, entered largely into these horses. With such well authenticated facts before us, we should feel fully impressed that we can count on no permanent supply of desirable horses for saddle or harness, without a portion of good blood, and a judicious and careful system of breeding. Always bearing in mind, that in order to produce the most perfect formed animal, plenty of nourishment is necessary from the first period of its existence until the growth is completed. It is also well worthy of our regard, to hold out proper inducements to measure the speed, and guage the bottom, and record faithfully the performance of the horse, in order to be able to select from the best, and prevent degeneration. Hoping these hurried remarks may contribute to stir up a spirit of inquiry on this subject,

I am, dear Sir,

Your obedient servant,

WILLIAM H. FOX.

To Albert C. Ingham, Esq.
Sec. Wis. State Agricultural Society.

LONG WOOLED SHEEP.—No. of Entries, 7.

Judges.—B. B. Cary, Milwaukee; Worden Matteson, Delavan; E. Newell, Kenosha; Samuel R. McClellan, Wheatland; B. F. Pixley, Janesville.

Second best buck over two years of age—Bakewell; Chas. Wardle, Union. $2.
Best ewe over two years of age—Bakewell; Charles Wardle, Union. Diploma.
Best buck and ewe lambs—Bakewell; Charles Wardle, Union. Diploma.

MIDDLE WOOLED SHEEP.—No. of Entries, 2.

Judges.—B. B. Cary, Milwaukee; Worden Matteson, Delavan; E. Newell, Kenosha; Samuel R. McClellan, Wheatland; B. F. Pixley, Janesville.

Best ewe under two years old—South Down; N. B. Clapp, Kenosha. Diploma.

MERINOES.—No. of Entries, 51.

Judges.—James M. Hawkins, Waupun; Adam E. Ray, Troy; Samuel R. McClellan, Wheatland; B. F. Pixley, Janesville; G. C. Pratt, Waukesha.

Best buck over two years of age; W. P. Benson, Fort Atkinson. Diploma.
Second best buck over two years of age; T. W. Williams, Emerald Grove. $2.
Best buck under two years of age; T. W. Williams, Emerald Grove. $2.
Second best buck under two years of age; Edward Bain, Kenosha. $2.
Best buck lamb; W. P. Benson, Fort Atkinson. $2.
Best ewe over two years of age; T. W. Williams, Emerald Grove. Diploma.
Second best ewe over two years of age; W. P. Benson, Fort Atkinson. $2.
Third best ewe over two years of age; T. W. Williams, Emerald Grove. $1.
Best ewe under two years of age; W. P. Benson, Fort Atkinson. $2.

SAXONS.—No. of Entries, 11.

Judges.—T. Stevens, Racine; Jonathan Larkin, Madison; O. Fowler, Racine; Thomas M. Williams, Kenosha; Samuel R. McClellan, Wheatland.

Best buck over two years of age; N. B. Clapp, Kenosha. Diploma.
Second best buck over two years of age; T. W. Williams, Emerald Grove. $2.
Best buck under two years of age; N. B. Clapp, Kenosha. Diploma.
Best buck lamb; N. B. Clapp, Kenosha. Diploma.
Best ewe over two years of age; N. B. Clapp, Kenosha. Diploma.
Best ewe under two years of age; N. B. Clapp, Kenosha. Diploma.
Best ewe lamb; N. B. Clapp, Kenosha. Diploma.

The Committee think that this class of Sheep was very fine. Those belonging to Mr. Clapp will equal, if not surpass, any in the State; and they would recommend them to the wool-growers throughout the State.

N. B. Clapp's Statement:

Kenosha, December 27th, 1851.

Dear Sir—Your letter of the 1st inst., doing me the honor of requesting from me a statement of the *blood* and *character* of my flock of sheep, I received by due course of mail; and although writing for publication is out of my line

of business, I will answer the few questions asked by you as accurately as I can, and perhaps besides these add a little more. I am aware that I can give you no new ideas on sheep management, yet I am willing, and will with pleasure give the Society my views of sheep, and my management of them.

I have at present five hundred *full blood* Saxony sheep. I purchased the flock with which I commenced in 1844, in Dutchess county, N. Y., and Litchfield county, Ct.; they originated mostly from the importation of H. D. Grove, of Hoosack, N. Y.; but of late I have been breeding from bucks of the late importations of Charles B. Smith, of Woolcotville, Ct. Mr. Smith was associated with some gentlemen in New York in these importations; the number imported was small, I think less than fifty; they were imported expressly for their own farms, and Mr. Smith said selected with much care; and judging from the sheep, I think Mr. Smith is justifiable in so saying, for, in my opinion, they are about what a fine wooled sheep should be.

During the summer, after shearing, my sheep receive but little attention, except to see that they do not become destroyed by dogs, or wolves, or strayed away, and are salted twice a week; for this, I keep a boy with my sheep through the day, and turn them in a yard at night; I pasture my sheep, with the exception of my bucks, on the unfenced prairie, from about the twentieth of April to the first of October; then I put them on my cultivated grass, and there they remain until I am compelled to sort my ewes in classes, for the buck, which is about the fifth of December.

I always feed them a small quantity of oats, in the sheaf, for at least ten days before I put them in the yard for winter, believing, that one bushel of grain at this time is worth more than two at any other time you can give it to them; for at this time the grass has been frequently frozen, and has lost much of its former richness; and I think one of the great secrets in wintering sheep well, is to put them in the yard in good condition.

In winter I keep my sheep in open yards, always providing them with good shelter and plenty of water. I feed them in the common box racks set in the open yard, with as much good hay as they will eat. I feed no grain, or roots, except to my lambs, and occasionally to an invalid. I keep salt and ashes mixed—one part ashes, two parts salt—in a trough under shelter, where they can have free access to it. I formerly salted my hay when I put it up; a practice which I condemn at present, believing that salt will be eaten, when needed, without compelling them to eat it at every mouthful of hay they eat; and besides this, I have noticed that in extreme cold weather when they had access to salt they would eat but little, and as the weather moderated they would eat much more; showing that they had a choice when to eat it—and, I believe, that choice should be gratified.

My sheep do not go out of the yard from the time I put them to hay until they go to grass in the spring, except once a month I drive them out, and drive off briskly, about forty rods, to try their strength; the weaker ones fall behind, and in that way I can ascertain if there be any that need a situation in the hospital, as I always keep a yard of this kind, and when I find a sheep weak, or in a decline, I place them in this yard, and as they regain their strength by care and good feeding—which this yard always receives—I place them back with their former companions; and in this way the hospital never has more than a dozen, and frequently not half that number of patients. After the hospital has received its patients in sorting for winter, I next put my bucks, such as I do not intend to use, in a yard by themselves, then the lambs—in another yard the weathers, then the ewes, according to the grade of wool and weight of fleece; and select such bucks as I think best suited to each yard, and turn them in, allowing one buck to forty or fifty ewes. The bucks remaining with the ewes through the day, and are taken out at night, and put in a yard by themselves, and fed plentifully with hay and grain. In this way the bucks are kept strong and vigorous, and my lambs come stronger than when bucks are allowed to be reduced in strength, which will surely be, if they are allowed to remain all the time with the ewes.

My bucks are put with the ewes about the first of December, and taken away about the first of June. I find by this treatment that my sheep go out of the yard in the spring, in as good condition as they came in at the commencement of the winter, with their wool more rich and perfect in appearance. If sheep in good condition in the fall do not receive sufficient care during the winter to keep them so, of course the wool will show it, and it very much lessens its value.

I have been engaged for a few years past in the purchase of wool, and have almost daily come in contact with wool of this character which was very much lessened in value by the bad management of the sheep through the winter. The other practice, which injures much of the wool in Wisconsin, is the beards and chaff that they get in their wool by running to and eating from straw stacks, a practice which I hope to see less of in future. As my sheep go out of the yards in spring, I *tag* them of all such wool as would become besmeared with manure as soon as the sheep go to grass, which would render it worthless, and very much check the growth of the sheep; this is done at the expense of one penny per head, and the wool saved by the process is worth three times the amount. As my sheep go out of the yard in the spring, about the first of April, they are turned on my cultivated grass through the day, and driven into the yard at night, and given some choice hay with grain every evening, until the grass has grown sufficiently for them to live upon.

As my lambs come, every lamb that comes through the day is taken out at night, together with its dam; and those that come through the night are taken

out in the morning, and kept apart from the main flock. This is not necessary in small flocks; but in large ones it is a matter of importance, for when lambs are coming frequently, an ewe, will very often, just before yeaning, take to some other young lamb and disregard her own—thus one lamb has two mothers, and the other lamb is left without one; this difficulty is very much lessened by the taking out of the young lambs, together with the dam, as often as is convenient.

My male lambs are all castrated before they are ten days old, except such as I intend for "stock bucks." I wash my sheep in a large vat of clear running water, and wash them as long as they discolor the water when pressed from the wool. I then put them on as *clean* green sward as I can conveniently; and, if the weather is good, shear in six or seven days after washing.

I aim to have my sheep shorn as evenly as I can, by procuring good shearers; after shearing, I turn my entire flock together, and let them remain together for about ten days, by this time, the sheep being destitute of wool, the ticks have left them and taken shelter in the wool of the lambs; now I dip the lambs in a decoction of tobacco, and in this way rid my whole flock of the ticks, which if allowed to remain in the sheep would materially injure their condition. I have long been of the opinion, that the Saxony sheep, fairly managed, would be perfectly hardy, and produce more dollars and cents than any other breed of sheep according to the feed they consume. Sheep consume just in proportion to their weight; and the sheep that gives the most money according to his weight of carcass, is the sheep I should prefer, and not the one that shears the most pounds of wool regardless of the carcass, that is to be supported at great expense to produce this big fleece. My object in the commencement of my flock, was to produce a strong, healthy sheep, with a fleece of superfine quality, and good fair weight. In this I have succeeded, I think, tolerably well, certainly beyond my expectations. I had much rather shear my sheep than describe them; their weight of fleece is an average of three pounds per head—With but few bucks or weathers, mostly breeding ewes and lambs. I have taken from a full blood Saxony buck seven pounds of wool, washed clean, and entirely free from grease and gum, the latter of which frequently forms a great part of those heavy fleeces we hear of being produced.

My ewes produce, on an average, about ninety lambs to one hundred ewes. As to the health of my sheep, you can judge a little from my losses in the past two winters. In 1850 I had a few over 500, my loss between fall and spring grass was three; in 1851 it was two.

I purchased last fall ten choice Merino ewes, they were brought from Vermont two years since by R. C. Otis, Esq., of this place; they originated from the flock of Stephen Atwood, of Ct. I purchased them expressly for testing their merits with my Saxons, keeping the blood of both pure, and treating them

alike; and in this way, I think, I can judge correctly, after one or two years, which of the two is the best.

I will say here, that thus far I have had no reason to change my former opinion, which was in favor of the Saxons.

I have also six pure blood South Downs, five ewes and a buck, which I purchased in Dutchess Co., N. Y., from the best flocks there. They originated from the flock of Jonas Webb, in England, and are of a medium quality in wool, and will average about four pounds of wool each. They mature very young, and are very much inclined to flesh; and, I think, are more profitable than any kind when small flocks only are kept, for the comfort and convenience of a family, as the wool is of an excellent quality for domestic use, and their flesh is most delicious; and I believe also, they are the most profitable when they are raised for the butcher. They are also very prolific, more than one half of the ewes bring two lambs, and are excellent milkers.

Yours, very truly,

To Albert C. Ingham, Esq. N. B. CLAPP.

Sec. of the State Agricultual Society of Wis.

PAULAR MERINOES.—No. of Entries, 8.

Judges.—James M. Hawkins, Waupun; Adam E. Ray, Troy; Samuel R. McClellan, Wheatland; B. F. Pixley, Janesville; G. C. Pratt, Waukesha.

Best buck over two years of age; Erastus W. Drury, Fond du Lac. Diploma.
Second best buck over two years of age; John A. Fletcher, Johnstown. $2.

CROSS BREED SHEEP.—No. of Entries, 41.

Judges.—T. Stevens, Racine; Jonathan Larkin, Madison; O. Fowler, Racine; Thos. M. Williams, Emerald Grove; Samuel R. McClellan, Wheatland.

Best buck under two years of age; J. Roberts, Janesville. Diploma.
Best buck lamb; J. Roberts, Janesville. Diploma.
Best ewe over two years of age; J. Roberts, Janesville. Diploma.
Best ewe under two years of age; J. Roberts, Janesville. Diploma.
Best ewe lamb; J. Roberts, Janesville. Diploma.

SWINE.—No. of Entries, 20.

Judges.—George O. Tiffany, Milwaukee; Andrew Aitkin, Jr. Waukesha; Richard Flack, ——; Charles Weed, Madison; Levi St. John, ——.

Best boar under two years of age (Byfield); A. A. Gifford, Johnstown. Diploma.
Second best boar under two years of age (Neapolitan); A. J. Luckey, Bradford. $1.

Best sow over two years of age; J. Spaulding, Harmony. Diploma.
Best sow pig under ten months of age; J. W. Dickey, Janesville. Diploma.
Best lot of pigs; A. Hoskins, Janesville. Diploma.

PLOUGHING MATCH.—No. of Entries, 9.

Judges.—Edward Elderkin, Elkhorn; Frank S. Lawrence, ——; Samuel G. Colley, Beloit; Ephraim Perkins, Dodge Center; C. C. Olin, Waukesha.

The following named persons entered as competitors for the premiums to be awarded by the State Society:

Horse Teams.

James West, Johnstown, Rock County.
John Brown, Johnstown, Rock County.
Messrs. Green and Foss, Watertown, Jefferson County.
Messrs. Alexander and Ainslee, Milton, Rock County.
J. Smith, Beloit, Rock County.
J. M. May, Janesville, Rock County.
Robert Taylor, Spring Valley, Rock County.

Ox Teams.

Timothy Jackman, Janesville, Rock County.
Lorenzo D. Thompson, Janesville, Rock County.

The Committee marked off the lands into pieces containing one-fourth of an acre each, one rod wide by forty rods in length; the quickest time was made by J. M. May, of Janesville, being twenty-six minutes. The best work was done by Messrs. Alexander and Ainslee, of Milton, and the Committee have unanimously awarded to Messrs. Alexander and Ainslee, for the *best work done*, the Society's first premium, a Diploma; to J. M. May, of Janesville, the second premium, $3. to Robert Taylor, of Spring Valley, the third premium, $2.

The time made by the Ox Team of Mr. Timothy Jackman was the same as that of Mr. J. M. May, but the style of his work was not equal to his competitor Mr. Lorenzo Thompson, to whom we have awarded the Society's first premium, a Diploma.

The ploughs used by Messrs. Alexander and Ainslee, Mr. J. M. May, and by Mr. Robert Taylor, were made by Mr. May, of Janesville; and the Committee have no hesitation in saying, that the *May plough* is superior to those usually found in this country; and is not only creditable to the maker, but to the rising mechanical genius now being developed in our young and vigorous State.

FARMING IMPLEMENTS.—No. of Entries, 43.

Judges.—No. 1.—John B. Smith, Milwaukee; A. A. Bird, Madison; E. Wood Cornes, Whitewater; J. W. Stillman, Milwaukee; Wm. Mulks, Whitewater.

Judges.—No. 2.—L. F. Blake, Whitewater; D. F. Cogswell, Brookfield; C. Densmore, Janesville; W. R. Higgins, Kenosha; Adam E. Ray, Troy.

Best plough, J. Milton May, Janesville. Diploma.

MAY'S IMPROVED STEEL PLOUGH.

Two of the leading peculiarities of this plough, which was recommended by the Committee for the first premium of the Society, are these:

First—The post, connecting the plough with the beam, passes up the side of the beam, and extends across, or partly across, its upper side, and is fastened by a single bolt. This mode gives several advantages:—1. The entire strength of the beam is retained—the cutting of a mortice through the beam, as in other ploughs, being obviated. 2. The facility it affords in wooding ploughs rapidly, and adjusting the draft with the utmost precision. And 3. In preventing straw and stubble from gathering under the beam and clogging the plough. It is found by experiment that the plough-post may be of less length and the beam from two to four inches nearer the surface of the ground, when this mode of fastening is adopted. The action of the furrow, as it is elevated and turned, carries with it straw, &c. without meeting the resistance of the corner of the beam as in the old style of wooding.

Second—The form of the mould-board and share:—A better idea of this, perhaps, cannot be given than by a quotation from the specification in the letters patent, in which a *semicone* is described, by which the conic form of the share and mould-board is illustrated.

"For a plough of ordinary size and for ordinary purposes, twenty-eight inches may be the base of the cone, and the height or apex one hundred and twenty inches; although the angle of the cone may vary according to the lightness, or heavy and compact nature of the soil. The share and mould-board are placed on the cone in a diagonal position.

"A diagonal line is commenced at the extremity of the base of the cone, and departing from the line of the cone two and a half inches in sixteen inches, inclining this line to the left for a right-hand plough, and to the right for a left-hand plough. Now place the point of the share at the extremity of the base of the cone and the edge of the share on this diagonal line, and let the share and mould-board be made to conform to the cone. The conic form of share and mould-board, gives great ease to the draft of the plough, and great perfection

to the work in covering weeds, straw and rubbish, and leaves the ground in good condition for subsequent cultivation."

Another consideration of much importance is, that the front part of the share and mould-board (always subject to the greatest wear) is made of double thickness of steel, giving the plough about twice the durability of those made in the usual manner.

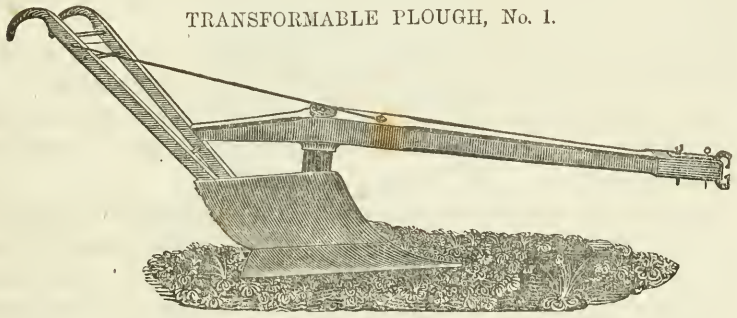
When the rules for forming the mould-board, for regulating the draft, for giving the relative position of the mould-board and beam, and the appropriate front angle for adapting the plough to different soils, are carefully observed, it is confidently claimed that these ploughs possess great superiority in their *durability*, the quality and perfection of the ploughing done, and in the amount of work accomplished in a given period of time.

Its present perfection has been attained by a series of experiments from year to year; and their uniformity of shape is secured by the use of heavy machinery in bringing the steel and iron into the proper form in the process of construction.

The same manufacturer is prosecuting further experiments with a view of constructing the plough as good, or even better than at present, with a reduction of at least one-third of the expense now required.

Experiments, also, during the past season, promise ultimate success in the construction of an improved, cheap corn plough or cultivator, and in adapting a steel subsoil plough to the Western prairies.

TRANSFORMABLE PLOUGH, No. 1.



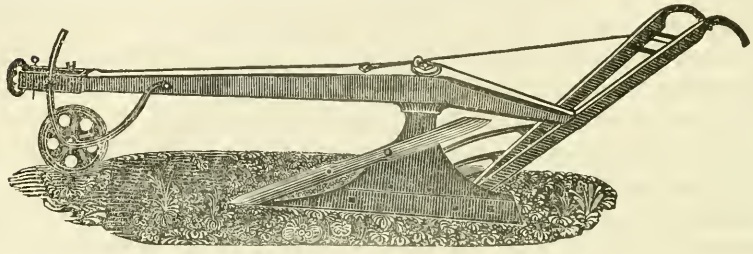
The above engraving is a view of this plough in order for breaking prairie with one span of horses.

The foundation is made of light boiler iron, the portions coming in contact with the earth being faced with steel plates. All lateral motion being obviated by this method, it combines lightness with great strength. The furrow is turned by means of three rods which, properly adjusted, reduces the friction at least twenty five per cent.

The coulter is made of a single plate of steel, about two and a-half inches in width, with two points and two cutting edges, and is fastened with a single bolt to the plate post; and when one point is dulled by use, it is reversed, and a new cutting edge and point is presented—thus giving about four times as much cutting edge as the common coulter.

It will be observed, that the position of the coulter is such that it forms with the base of the plough an acute angle, making an important item in the easy draught of the plough. An ordinary day's work with one span of horses is one and a half to two acres.

TRANSFORMABLE PLOUGH, No. 2.



This engraving exhibits the same plough, with the wheel, share, coulter, and rods, used in breaking, removed, and a steel share and mould-board, of any desired size and form, applied.

It requires the ploughman but a few minutes to make the change, and it is then ready for ploughing stubble, and all descriptions of cultivated lands.

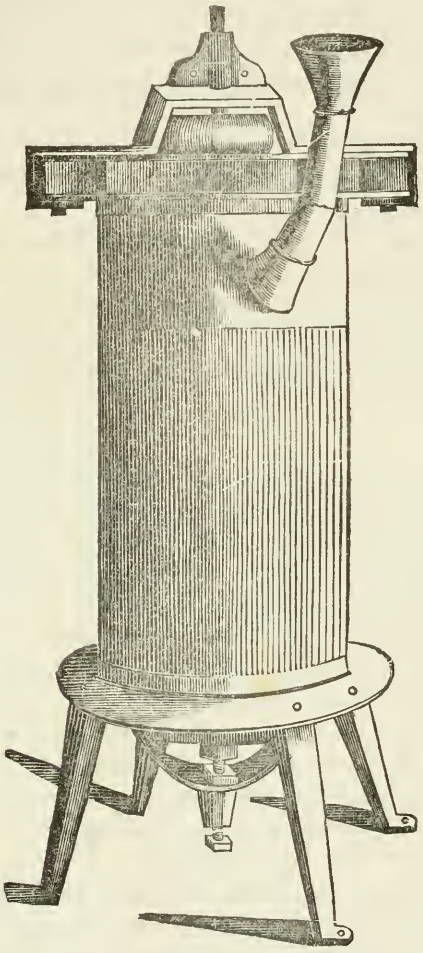
The steel mould-board and share, costing about five dollars, takes the place of the ordinary steel plough, which costs from ten to fifteen dollars, according to size and quality.

Although this improvement is new, it has been thoroughly tested and approved by some of the best farmers in Wisconsin. The usual breaking plough is used for a short time only, in each season, and is useless for the balance of the year—while this plough, capable of being changed for the purposes above described, and being used by the ordinary farm team, instead of three to six yoke of oxen, supplies a deficiency hitherto unprovided for.

Best harrow; Thompson Littell, Milwaukee. Diploma.
Best cultivator, Thompson Littell, Milwaukee. Diploma.
Best three horse evener; Simon Rublee, Beloit. Diploma.
Best grain reaper (McCormick's); A. P. Dickey, Racine. Diploma.

Best fanning mill; A. P. Dickey, Racine. Diploma.
Improved threshing machine jack; Joshua Davis, Kenosha. Diploma.
Best smut machine; S. B. Newcomb, Madison. Diploma.

GRIMES' SMUT MACHINE.



These machines are claimed to possess advantages over any ever before offered to the public. The machines are heavier, and have enlarged throats and issues for feeding and delivering the grain. A few of the most decided advantages they possess are these:

1st. They will clean in the most perfect manner the foulest and smuttiest wheat, and render the same, once passed through the machine, clean grain.

2d. They do the work much quicker, and in a better manner, than other machines.

3d. It takes much less power than any other machine of the kind. The saving to millers in this respect is very important, as it enables them to run (with the same power) five, where they have been able before to run but four pair of stones, which is a saving of twenty-five per cent., by enabling them to grind one-fourth part more in the same space of time, beside cleaning the wheat for the whole perfectly.

4th. Their durability is of great advantage. The constantly recurring expenses of repairs, so heavy in other machines, by using this machine, are saved, as there is nothing to adjust, repair, or renew.

5th. There is no waste whatever in cleaning wheat with these machines, and the difference in the weight of any quantity of wheat before and after cleaning, is precisely the amount of dirt, smut, and other foul matter blown out at the top of the machine, without carrying with it a single kernel of wheat, or even those parts of kernels that have been previously broken by the threshing machine.

Best corn sheller; Joshua Davis, Kenosha. Diploma.
Best corn grinder; A. P. Dickey, Racine. Diploma.
Best corn drill; S. D. Baldwin, Adrian, Mich. Diploma.
Best churn; S. D. Baldwin, Adrian, Mich. Diploma.
Best fine harness; George Dyer, Milwaukee. Diploma.
Best common harness; George Dyer, Milwaukee. Diploma.
Best draught collar; N. S. Woodruff, Janesville. Diploma.
Best Buggy waggon; A. Baker, Racine. Diploma.
Best carriage springs; S. H. Hurd, Watertown. Diploma.
Best grain cradle; H. Hammond, Clinton. Diploma.
Best hand rake. S. Rublee, Beloit. Diploma.
Best garden rake; Parker and Stone, Beloit. Diploma.
Best hay forks; Adam E. Ray, Troy. Diploma.
Best manure forks; Adam E. Ray, Troy. Diploma.
Best grass scythe; Adam E. Ray, Troy. Diploma.
Best grain scythe; Adam E. Ray, Troy. Diploma.
Best hay knife; Adam E. Ray, Troy. Diploma.
Best sausage meat cutter; Simon Rublee, Beloit. Diploma.
Best butcher knives; Parker and Stone, Beloit. Diploma.
Best grain sycle; Parker and Stone, Beloit. Diploma.

Best brooms; William Mulks, Whitewater. Diploma.
Best threshing machine; M. Hughes, Kenosha. Diploma.
Best tread power threshing machine; J. J. Case, Racine. Diploma.
Best hay cutter; A. Henderson, Johnstown. Diploma.
Best portable mill; M. Millard, Lake Mills. Diploma.
Best soap; E. D. Ladd, Milwaukee. Diploma.

DAIRY.—No. of Entries, 7.

Judges.—Martin Webster, Waushara; James Reynolds, Burlington; Rufus King, Milwaukee; O. W. Norton, Janesville; James T. Saxby, Reedsburgh.

Best butter; J. Cory, Bachelor's Grove. Diploma.

J. Cory's Statement:

Bachelor's Grove, Rock Co., Dec. 21st, 1851.

Dear Sir—In compliance with the request contained in yours of the 1st of December inst., that I would communicate to you for publication, the process used in making the butter exhibited by myself at the late State Fair. I will say, that it gives me pleasure to do so, and I will, to the best of my ability, endeavor to perform this service.

The cows, from which the samples of butter above alluded to were made, were kept at that time on timothy pasture with other feed; they are six in number, and are all of what are termed the native breed of this country.

The milk, when drawn from the cows, is strained into tin pans, and placed in a cool cellar, where it is allowed to stand until it becomes thick, or "clabbered," when it should be churned immediately, for if it is allowed to stand long after this time, the cream will become sour, and the butter will be rancid. We churn the milk and cream together, and usually churn from three-quarters of an hour to an hour; and use a dash churn that will hold one barrel—fill it about half full of milk, and, in warm weather, add from one to one and one-half pails full of cold water before we commence churning, and add more before the churning is finished, in order to thin the milk so as to get it all out of the butter. If the milk should be too cool during the churning, which may be known by its "frothing," add a little warm water. We use no thermometer, and therefore cannot tell the exact temperature that may be necessary in making butter.

We use "dog power," with the inclined wheel, for churning, and sometimes use a sheep on the same wheel—either answers the purpose well. When the churning is done the butter is taken out and washed through two waters, and salted; the salt is worked in a little; it is then set by until the salt has had time to dissolve, when it is worked over with a hand ladle until all the buttermilk is

worked out of it, then it is ready for packing, except in very warm weather, when it is left until the next morning before packing.

The month of June is generally best for butter as to quantity; but I think as good butter can be made in the month of September, provided the cows have good timothy, or clover and timothy pasture.

I consider the native grasses of our prairies equal to the best cultivated grasses for about three months during the season of grassing; but they are not worth much for milch cows after the month of August.

I believe that a large share of Wisconsin, as far as I am acquainted, is equally as well adapted in every respect for dairy purposes as any place in any State, not excepting my native place, "old Orange County," N. Y. But to make a good article of butter in any place, some things are indispensible, and among these are good tame grass pasture, especially for spring and fall feed—good well or spring water, and not "slough" water—good cows—a good cellar to keep the milk and butter in—particular care to keep the milk pails, pans, and churn perfectly sweet and clean—a good article of salt—strict attention to churn the milk when it is just in the right condition, and churn just long enough and no longer, and then to work all the buttermilk out.

I have kept no account of the amount of butter made or sold the past season. I am just commencing the dairy business in Wisconsin, and have had some little experience in wheat raising; and hope to make the dairy business at least as profitable as raising hedge-row.

If anything herein contained should prove to be of any benefit to the Society, or to my brother farmers, I shall be amply repaid for communicating it.

Yours, very truly,

To Albert C. Ingham, Esq. J. CORY.
Secretary, &c.

Second best butter; Hugh Jehu, Harmony. $2.
Best cheese; Samuel A. Thurston, Burlington. Diploma.

Samuel A. Thurston's Statement:

Burlington, January 1st, 1852.

Dear Sir—At your solicitation, I will endeavor to give you a condensed account of my observations and experience in cheese making. I have been engaged in the business for several years past, more or less—most of the time in the State of New York, as it is but little more than a year since I came to this State. My location is at Burlington, Racine County. My farm is composed partly of prairie and partly of openings, and contains about three hundred acres. I milked the last season sixty cows. I commenced making cheese the first of May with

twenty five cows, and it was not until the middle of June that I had my number complete; twelve of these were heifers that were never milked before. Some of my cows proved to be bad milkers, those I dried off in September; this reduced my number to fifty. I made from the first of May to the first of November, nine tons of cheese. The precise amount of butter that I have made in the course of the season I cannot tell, but it will not vary much from eight hundred pounds. I have had many and serious difficulties to contend with, the past year, having my cows to pick up in different places, bringing them together entire strangers to each other; and many of them coming in late, very much lessened the product of the dairy. The inconvenient and improper fixtures which are to be found, in many instances, for making and curing cheese, all unite in convincing me, that any set of rules for making cheese would not be practicable even with the most proficient cheese maker. It is therefore necessary that those engaged in the manufacture of cheese should have sufficient knowledge of the science to determine the result of their practice, and this cannot be learned from verbal instruction. It is by practical experience and close observation only, that the maker can learn to adapt his practice to the frequent and extreme changes to which our climate is subject, varying the quality of the milk, and materially affecting cheese in process of curing. There are, however, leading principles which form the basis of operations, and should be closely adhered to in all cases in the process of manufacturing cheese. My usual mode is to take my evening's and morning's milk to make one cheese; the evening's milk is strained into a tub, and cooled to prevent souring. This is done by setting a tin vessel into the tub filled with cold water; this I usually do when I commence milking. If the weather is very warm and sultry, the water will need to be changed once and sometimes twice in the course of the evening; for unless the animal heat is extracted, the milk will be sure to sour in the morning. I take off the cream that rises, and put evening's and morning's milk together.—I put a quantity of new warm milk with the cream, stir it well together, and put it into the tub with the rest of my milk, the curdling heat of which should be about ninety degrees. I then put in a sufficient quantity of rennet to produce coagulation in from thirty to forty minutes; while the curd is forming, it should be let entirely alone. After the curd is completely formed, I cut it up with a cheese rake made for that purpose; I then let it stand twenty or thirty minutes for the whey to separate from the curd; I then proceed to break up the curd, and this must be done with the utmost care, and especially if the curd comes soft. After I have gone through with it, and thoroughly stirred it in every part, I then let it stand and settle; a strainer is thrown over the tub, and gently pressed down with the hand into the whey, a portion of which is dipped off, and placed over the fire to heat; while this is heating, I work the curds with my

hands until it is as fine as wheat. After this process is gone through with, I commence the scalding process by pouring on hot whey; this should be carried to about one hundred degrees; the curd should be well stirred during the time of scalding. When the curd is sufficiently cooked so that it feels elastic, and will squeak when chewed between the front teeth, it is separated from the whey to receive the salt; this is done by dipping it into a strainer over a sink. This may be done without its adhering in lumps, by stirring it in a small portion of cold whey until cooled to ninety or ninety-five degrees. Here great care should be used, as much depends upon the curds being in a proper state to receive the salt. After the whey is sufficiently drained off I salt my curd, putting in a common teacup-full of salt to twenty pounds of cheese; after it is well stirred together, I immediately put it into the press.

My mode of pressing is to press light the first ten minutes, after that I turn the screw hard upon it. I press my cheese twenty-four hours, turning once in the time. My opinion is, that we cannot press too hard if the cheese is properly manufactured. After the cheese is taken from the press it is immediately colored, and left to stand until dry, and then thoroughly greased and bandaged. I am not in the habit of using much grease: after this a very little occasionally is sufficient. I find by turning my cheese every day, and rubbing them with the hand, they become smoother upon the surface than they do by using more grease. Oil is obtained for greasing cheese from the whey; after standing twenty-four hours, it is churned till separation takes place like butter, then melted over a slow fire until it turns to oil.

I might say much more, as there are many things connected with the dairy business that I have not even hinted at in this communication. I find that there are many objections raised by farmers in this State to the dairy business; and one very serious one in the minds of many is, the difficulty of obtaining suitable food for cows at all seasons of the year. It is known to us all, that our prairie grass cannot be depended on for fall feed; and it is also known, that it must be some considerable time before we can make much dependence upon the tame grasses. That these are desirable I acknowledge; but I think we can supply the deficiency with a very little expense. Our soil is well calculated to produce a good growth of corn, and this sowed broadcast produces an abundant crop, and can be produced at the very time it is desired; I sowed a few acres the past season and found that it did extremely well. I sowed it the fore part of June, and put three bushels of seed to an acre. I prefer the eight-rowed yellow corn to any that I have ever seen tried. Any persons unacquainted with this kind of corn will be surprised at the amount obtained from an acre. It is also a well-known fact, that we can produce roots to almost any extent that we choose, our soil being well adapted to their growth. I prefer carrots for cows to any roots I

have ever tried or seen used; these we can raise by selecting a suitable piece of ground, from five to eight hundred bushels to the acre; every bushel of which is worth two bushels of potatoes to feed to cows or to fat cattle. I have never been in the habit of feeding much grain to my cows. I usually commence to feed grain the latter part of February, and feed a little every day from that time until I can obtain a full bite of grass.

Yours respectfully,

To Albert C. Ingham, Esq. S. A. THURSTON.
Secretary, &c.

Second best cheese; Stephen Faville, Milford. $2.

GRAINS AND HONEY.—No. of Entries, 8.

Judges.—Charles S. Hurley, Milwaukee; George C. Pratt, Waukesha; Charles F. Illsley, Milwaukee; Milo Jones, Fort Atkinson.

Best winter wheat; N. P. Bump, Janesville. Diploma.
Second best winter wheat; Allen O. T. Breed, Milwaukee. $2.
Best broom corn; Jonathan Pound, Fulton. Diploma.
Best hops; S. Antisdel, Beloit. Diploma.
Best bee-hive; T. McElhenny, Beloit. Diploma.
Largest squash; E. C. Hull, Madison. $1.

FLOUR AND CORN MEAL.—No. of Entries, 4.

Judges.—C. C. Olin, Waukesha; T. T. Whittlesey, Madison; Ludim Crouch, Waukesha; B. B. Cary, Milwaukee; Adam E. Ray, Troy.

Best barrel of flour; Strausberger and Co. Janesville. Diploma.
Best sample of hominy; Williams and Noland, Madison. Diploma.

HOMINY.

This excellent article of food alike cheap, nutritious, and pleasant, may be prepared in the true Southern style, by any one willing to bestow a little labor upon it.

The manner of preparing it in the purest and best style is given in the following extract from a letter addressed to this Society, by Thos. W. Merriwether, M. D. of Albemarle county, Virginia, written in answer to a letter soliciting the same:

"Hominy is of two distinct kinds, large and small: the first is beaten in a mortar, the last ground in a corn mill—the mortar is made of wood. Take a

white oak log 36 inches long and from 16 to 18 inches thick, sawed square at each end; set it on end and bore a large auger hole in the centre, say six inches deep; then place a rim of wet clay around the edge to prevent burning out too near the edge; then commence a fire in the centre over the hole—corn cobs, stacked like a coal kiln, are used chiefly for this fire—which is kept burning till the hole is a foot deep; then dress this hole till the burned portion is removed, and a hard firm surface is left in the shape of a common mortar, the chipping off the burnt surface should be done at several times during the process of burning, to keep it in proper shape, leaving a rim of one or two inches unburnt around the top.

"The pestle in general use is a common iron mauling wedge inserted in the split end of a stick thirty inches long and three inches thick, and an iron ring forced down over the upper part of the wedge to keep it in place.

"Take white flint corn and put from one to two quarts into the mortar, and pour a little boiling water on occasionally to keep it moist and cause the skins to slip off the corn, and prevent the flinty portion from being beaten into meal; during the process of beating, remove the whole contents of the mortar occasionally into a tray, and toss it in a current of air so as to fan out the meal and bran; beat till every grain is broken and skinned. If not used soon after it is beaten, it should be carefully dried, or it will be likely to sour.

"Small hominy should be made of the same white flint corn, which being a little moistened, is then ground in the same manner as corn meal, except raising the stone about two or three times higher, so as to crack the grain to about the size of wheat; this is known and sold (at the South) as grits, and is there in general use. It is prepared in the best manner as follows: Sift the flour from the grits, scour it well to get off the husks, &c., put two quarts of water to one quart of grits, and boil until the water is entirely absorbed, cover the pot and set it on hot ashes to soak, which will take from fifteen to twenty minutes, after which the hominy is fit for use—salt should not be forgotten.

"This small hominy is of far more importance than the large, being much more easily procured, and, when well cooked, is an invaluable dish.

"The large hominy is cooked in a similar manner, but before being taken up should be well mashed against the sides of the pot; a half pint of white beans added to a quart of hominy is considered an improvement. If seasoned with lard, put it in before taking the hominy off the fire; butter may be added at any time. Care should be taken to preserve the whiteness of the hominy, and mixed corn should never be used in making it."

DOMESTIC MANUFACTURES.—No. of Entries, 14.

Judges.—S. S. Daggett, Milwaukee; Rufus King, Milwaukee; Chauncey Abbott, Madison; A. W. Powers, Palmyra; H. Richardson, Janesville.

Best silk hose; Worden Matteson, Delavan. Diploma.
Best woollen yarn; Worden Matteson, Delavan. Diploma.
Best woollen stockings; H. M. Allen, Union. Diploma.
Best blanket; Worden Matteson, Delavan. Diploma.
Best piece of flannel; H. M. Allen, Union. Diploma.
Best piece of cloth; P. Judson, Kenosha. Diploma.
Best linen thread. Worden Matteson, Delavan. Diploma.

ORNAMENTAL NEEDLE WORK.—No. of Entries, 23.

Judges.—W. Welch, Madison; S. Gardiner, Jr. Milwaukee; Mrs. M. A. Allen, Union; Mrs. H. J. Starin, Whitewater; Mrs. M. A. Smith, Milwaukee.

Best pair of ottoman covers; Miss E. H. Langdon, Milwaukee. Diploma.
Best pair of lamp matts; E. B. Dean, jr., Madison. Diploma.
Best Odd Fellows' regalia; Samuel Gardiner, jr., Milwaukee. Diploma.
Best worsted table cover; Mrs. Wardner, Milwaukee. Diploma.
Best ornamental table cover; J. D. Browne, Janesville. $3.
Best pair of stockings; Mrs. A. Henderson, Beloit. Diploma.
Best rug; Mrs. A. H. Morse, Richmond. Diploma.
Best quilt; Mrs. W. Hughes, Janesville. Diploma.

FRUIT.—No. of Entries, 40.

Judges.—H. J. Starin, Whitewater; Simeon Mills, Madison; J. F. Drake, ——; F. W. Loudon, Janesville.

Best variety of apples; Franklin K. Phœnix, Delavan. Diploma.
Second best variety of apples; S. P. Beecher, Milwaukee. $2.
Best variety of pears; P. M. Perkins, Burlington. Diploma.
Second best variety of pears; S. P. Beecher, Milwaukee. $2.
Third best variety of pears. Franklin K. Phœnix, Delavan. $1.
Best variety of peaches; George O. Tiffany, Milwaukee. Diploma.
Best variety of plums; J. C. Howard, Milwaukee. Diploma.
Second best variety of plums; P. M. Perkins, Burlington. $2.
Best variety of grapes; W. Tallcott, Rockton, Ill. Diploma.
Second best variety of grapes; Harrison Ludington, Milwaukee, $2.

It is greatly to be regretted that the Committee did not give the names of the varieties of Fruit which received the premiums.

REPORT OF THE COMMITTEE:

From the limited time allotted to the Committee, it has been impossible to examine the different specimens of fruit presented, with that care and attention necessary to arrive in every instance, perhaps, to a correct conclusion.

In awarding premiums they have endeavored to deal justly, but in some instances the samples presented have held so strong claims to equal merit, that the Committee have been unable to decide between competitors with perfect satisfaction to themselves.

Although the quantity of fruit brought forward was not great, yet its superior size, uniform fairness, and excellent qualities, were such as would have done credit to older and more advanced fruit-growing States; and, taken as a whole, made a display of which our State, in the infancy of its horticulture, may well be proud.

The growing of fruit in Wisconsin can no longer be regarded as problematical; it has now become a fixed fact, and it can only be a source of deep regret that this branch of agriculture should have thus long received so little attention. The difficulty, however, that has heretofore existed in importing fruit trees from a distance, at a comparatively heavy expense, may perhaps be urged as a strong reason why so few of the early settlers, even at this day, are enjoying to any extent one of the greatest luxuries of civilized life. But at present the extensive propagation of fruit trees in nurseries that have already been opened in different localities in this State, obviate this formidable difficulty to such an extent, that the Committee feel called upon, not only to recommend, but earnestly to urge upon every farmer, who has thus far been negligent, to set about it at once, and see that his grounds are beautified, and himself enriched, by an orchard.

Nor is it to the farmer alone that the cultivation of fruit should be exclusively committed. Every person being the owner of a habitation, may improve its appearance and value, and increase his comforts, by the raising of a single tree. If ground and means be limited, plant out the less in number, and let that few be of the choicest kinds.

No investment of capital gives a surer, or more pleasing return, than that expended in planting and promoting the growth of trees. Buildings, fences, implements and fixtures of every other kind, from the moment they are completed, are subject to certain and constant waste and decay, involving a continued outlay for improvement and repair. But not thus with the tree; when once its habitation is fixed in a genial soil and climate, with a little judicious aid bestowed, rather as pastime than labor, it continues increasing in size, beauty, and value, during the ordinary life of man, and passes down to the succeeding generation a living monument of the foresight and enlightened taste of a thrifty and benevolent predecessor.

From the experience of practical fruit growers in different countries, the fact has long since been well settled, that no kind or variety of fruit succeeds equally well in all localities, and from the limited time that fruit has been cultivated in this State, it is at present difficult, nay impossble, to decide with any degree of certainty, what kinds will best reward the cultivator in this soil and climate. But from the size and uniform fairness of the specimens presented, the Committee cannot entertain a reasonable doubt but what the different kinds that have been found to succeed well in the Eastern and Middle States, will be equally productive and profitable with us.

The following selection of fruits have been made upon the authority of experienced and practical fruit-growers in different parts of the country, and are recommended by the Committee as prominent among the varieties worthy of a first trial. Experience, however, may prove that some of them will fail to maintain with us their usual good character, and should of course be made to give place to more promising kinds; but of this, nothing short of a thorough trial will justify the entire rejection of any standard fruit of the Eastern or Middle States.

LIST OF SELECT FRUITS.

Apples.....*Summer.*—Early Harvest, Red Astrachan, Early Eve, Early Strawberry, Sweet Bough.

Fall.—Fall Pippin, Gravenstein, Hawley, Porter, Pomme Royal, Rambo, Golden Sweet.

Winter.—Baldwin, Yellow Belflower, Rhode Island Greening, Belmont, Peck's Pleasant, Swaar, Esopus Spitzenberg, Roxbury Russet, Newtown Pippin, Northern Spy, Tallman Sweet.

Pears.....*Summer.*—Madeline, Bloodgood, Dearborn's Seedling.

Autumn.—Bartlet, White Doyenne, Seckel, Urbaniste, Flemish Beauty, Louisa Bon de Jersey, Maria Louisa, Oswego Beurre.

Winter.—Winter Nelis, Beurre de Aremburg, Vicar of Wakefield, Easter Beurre.

Plums.....Early Orleans, Bolmar's Washington, Green Gage, Imperial Gage, Jefferson, Coe's Golden Drop.

Cherries...May Duke, Black Tartarian, Graffion or Bigarreau, Elton, Late Duke.

Grapes.....Clinton, Catawba, Isabella.

All of which is respectfully submitted,

H. J. STARIN,
SIMEON MILLS,
J. F. DRAKE,
F. W. LOUDON,
} *Committee.*

Janesville, October 2d, 1851.

FLOWERS.—No. of Entries, 12.

Judges.—Albert C. Ingham, Madison; E. B. Quiner, Watertown; George W. Crabb, Janesville; E. C. Hull, Madison.

Best general display; Charles Gifford, Milwaukee. Diploma.
Best floral ornaments; Charles Gifford, Milwaukee. Diploma.
Second best general display; S. P. Beecher, Milwaukee. $2.
Best display of dahlias and phloxes; Franklin K. Phœnix, Delavan. Diploma.
Second best display of dahlias and phloxes; J. W. Parker, Milwaukee. Certificate.

PAINTINGS, PRINTING, AND DAGUERREOTYPES.—No. of Entries, 12.

Judges.—E. B. Quiner, Watertown; Albert C. Ingham, Madison; George W. Crabb, Janesville; E. C. Hull, Madison.

Best exhibition of card printing—equal Premium; Rufus King, Milwaukee, Diploma.
Best exhibition of card printing—equal premium; Charles S. Hurley, Milwaukee. Diploma.
Best exhibitions of card printing—equal premium; B. B. Cary, Milwaukee. Diploma.
Best exhibitions of card printing—equal premium; Elisha Starr, Milwaukee. Diploma.
Best specimen of book and pamphlet printing; Rufus King, Milwaukee. Diploma.
Best exhibition of daguerreotypes; Stamm and Upmann, Milwaukee. Diploma.
Best specimen of painting in water colors—flowers; Miss H. Brace, Janesville. $2.
Second best specimens of painting in water colors—flowers; Miss Jane Goodrich, Milton. $1.
Best landscape paintings; Miss Olive Ketchell, Janesville. Diploma.
Best specimen of painting in oils; Oliver S. Clayton, Beloit. Diploma.

Card Printing.—The Committee report that the specimens presented were all of the best character, and were pleasing evidence of the height to which this department of "the art preservative of all arts," had been carried. In view of the impossibility of giving the palm to any particular competitor, they have given equal rank to all.

Book and Pamphlet Printing.—The specimens exhibited by General Rufus King, of Milwaukee, were of the finest style of work, and show conclusively that "book-making" can be carried on in Wisconsin as well as among "the rest of mankind."

DAGUERREOTYPES.—The Committee gives the highest praise to Messrs. Stamm and Upmann for their exhibition. The fullness and distinctness of the lineaments of the face, and the life-like expression of the eye, which marks these specimens, bespeak the true artist.

PAINTINGS.—All of the specimens of painting and sketching were of great beauty and finish, and some evinced a rare talent and appreciation of the beautiful that should be encouraged.

STOVES.—No. of Entries, 1.

Judges.—SAMUEL S. DAGGETT, Milwaukee; HAMILTON RICHARDSON, Janesville; E. D. LADD, Milwaukee; N. P. BUMP, Janesville.

Best economist cooking stove; James Saville, Milwaukee—no competition. Diploma.

SILVER AND GOLD WARE.—No. of Entries, 4.

Judges.—SAMUEL S. DAGGETT, Milwaukee; HAMILTON RICHARDSON, Janesville; RUFUS KING, Milwaukee; N. P. BUMP, Janesville; SARAH KEELER, Geneva.

Best exhibition of jewelry; A. B. Van Cott, Racine. Diploma.
Best exhibition of fancy gold and silver ware; Samuel Gardiner, jr., Milwaukee. Diploma.
Best gold watch; J. R. Treat, Milwaukee. Diploma.

MISCELLANEOUS AND DISCRETIONARY.—No. of Entries, 41.

Judges.—MARTIN FIELD, Mukwonego; A. P. DICKEY, Racine; C. FAIRCHILD, Madison; E. A. HOWLAND, Janesville; S. S. DAGGETT, Milwaukee.

Best pure saleratus; E. D. Holton, Milwaukee. Diploma.

MR. HOLTON'S STATEMENT:

The great merit of my saleratus is its purity, entire freedom from poisonous substances, and the presence of the highest amount of carbonic acid; as will be seen by the following analysis made by the State Assayer of the State of Massachussets. The 'Barnard" parcel of which he speaks, is the celebrated Boston Saleratus.

E. D. HOLTON.

Results of a Chemical comparison of two Samples of Saleratus.

1, Pine Street, Boston, 6th Sept., 1850.

First sample, marked "Barnard."—This was a white, mealy, dry mass, composed of powder and lumps; when reduced to powder, it presented only opaque, nearly snow-white granicles. It contained besides pearlash, and its salts united to carbonic acid, an odorous body derived from a fermenting vat. One hundred parts of this powder, afforded thirty-four parts of carbonic acid.

Second sample, marked "Holton."—The same general appearance was presented by this as in the former sample. When reduced to powder, it slightly attracted moisture, and its powder was hardly as snow-white as the first sample. "Neither sample contained the slightest trace of poisonous metals." The odorous substance from the fermenting vat could not be found in this sample.

One hundred parts of this sample gave 34.80 carbonic acid.

As in the use of these substances, the amount of carbonic acid is to the consumer the point of primary importance, it will be seen that the second sample containing nearly one per cent. more than first, it also absorbs a little water, which by adding to its weight would reduce the per cent. of carbonic acid probably to the same standard as "Barnard." The latter seems to have absorbed all the water it contained, and is therefore dry.

Both are excellent preparations, and the first can hardly be distinguished from the second.

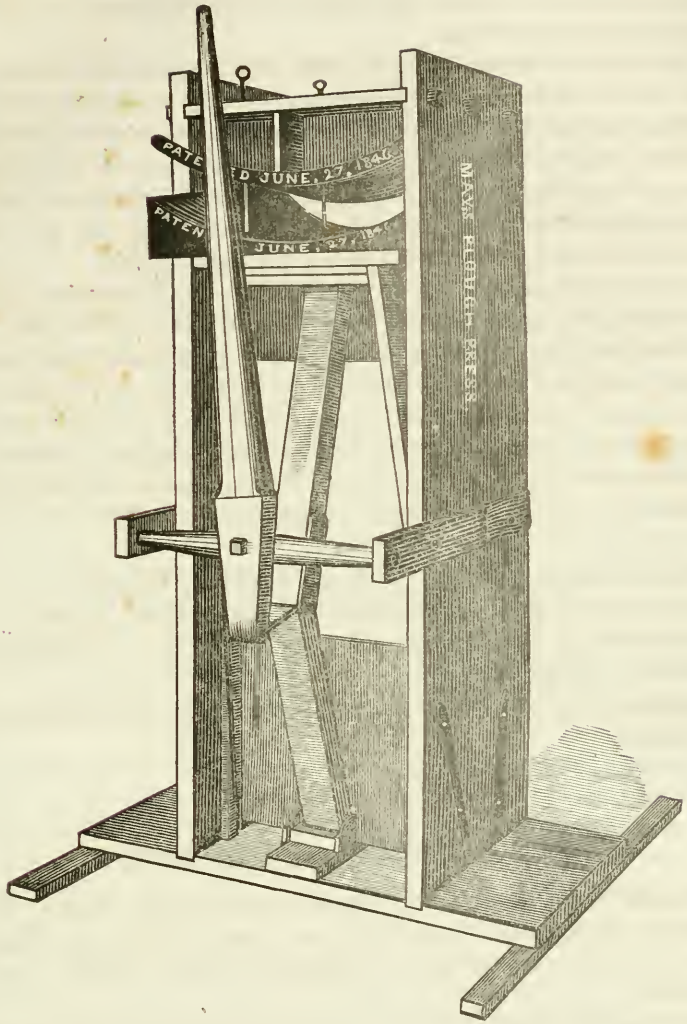
Respectfully,

A. K. HAYS,

State Assayer.

Best case of surgical instruments; Holden, Kemp and Co. Janesville. Diploma.
Best assortment of wire scenery; S. S. Daggett, Milwaukee. Diploma.
Best assortment of ornamental and fancy books; J. Morrison, Racine. Diploma.
Best supporters (shoulders and abdominal); Dr. Whiton, Chicago, Ill. Diploma.
Best platform balance scales; N. B. Gaston, Beloit. Diploma.
Best brass and fancy clocks; J. W. Stillman, Milwaukee. Diploma.
Best specimen of fancy book-binding (Harper's Bible); Sidney L. Rood, Milwaukee. Diploma.
Best specimen of blank book-binding; Weed and Eberhard, Madison. Diploma.
Best circular saw and arbor; Barker and Love, Beloit. Diploma.
Best specimens of dressed flax; John Galbraith, Mukwonego. Diploma.
Best assortment of hardware; Henry J. Nazro, Milwaukee. Diploma.
Best copper coffee urn; H. K. Edgerton, Milwaukee. Diploma.
Best plough-making machine; J. Milton May, Janesville. Diploma.

PLOUGH MAKING MACHINE.



New and improved machinery for the purpose of cheapening and rendering more perfect the implements used by the mechanic and farmer, are important and valuable precisely in proportion as they render the article manufactured by their use more perfect in quality, and the amount of labor saved in the facilities thus afforded for rapid construction.

The above engraving is a perspective view of a machine that, in a large degree, combines these intrinsic qualities. It is used in the construction of those ploughs which were exhibited at the State Fair, and which were tried with so much success on that occasion.

The machine is operated by a lever, which when brought to a horizontal position, brings into line a series of articulated knuckle-joints, forming a column, bringing together with great power the heavy matched iron swedges in which are formed the steel plates constituting the most essential element of the plough, the plates being regulated by sliding adjusting rods during the process; and the swedges adjusted to the thickness of the steel plates to be wrought, by a wedge at the base of the machine, directly beneath the jointed column.

So unusual a machine as this, being exhibited at a Fair, elicited many inquiries in regard to the purposes for which it is used, and the manner of working it.

It has great power, capable of giving from fifty to one hundred tons pressure, almost instantly—is compact, yet simple in its construction, and not liable to be out of repair. It is worked by one man, and is of the highest importance in giving perfection to the form of the steel plates; and multitudes of farmers are indebted to this mechanical contrivance for the excellence of that indispensable and most important of all implements—the Plough.

Best show of cabinet furniture; Levi Moses, Janesville. Diploma.

Best specimens of sawed and cut stone; G. W. Taylor, Rock. Diploma.

Best specimens of engraving, seal-cutting, and die-sinking; P. L. Mossin, Milwaukee. Diploma.

New apparatus for raising water from wells; J. S. Linderman, Manchester, Ill. Diploma.

ANNUAL MEETING, JANUARY 21, 1852.

The Society met in the Senate Chamber, which had been tendered to the Society by the Honorable the Senate, on the evening of Wednesday, January 21st, A. D. 1852, at seven o'clock, a very large number of members being in attendance.

The President, Erastus W. Drury, Esq. being absent, the Society was called to order by Hon. Henry M. Billings, Vice President, from the second congressional district, who took the chair, assisted by Hon. William F. Tompkins, Vice President, from the third congressional district.

The President presented the report of the Executive Committee, extracts from which were read by the Secretary.

Mr. Ingham, the Recording Secretary and Acting Corresponding Secretary, presented and read his report.

Hon. Chauncey Abbott, Treasurer, presented his report, which was read by the Secretary.

On motion of A. Hyatt Smith, Esq., of Janesville, the several reports were accepted.

Hon. E. B. Dean, jr., of Madison, moved that the Society do now proceed to the election of Officers for the ensuing year, which was carried.

The President announced that a ballot would first be taken for the election of a President, and appointed Messrs. E. B. Dean, jr., of Madison, and Isaac Woodle, of Janesville, as Tellers.

And the roll of members having been called, and the Secretary having announced that all the members present had voted, Messrs. Royal Buck and Philo Dunning, of Madison, claimed the right to have their names called as members, and to vote, on the ground that one year had not elapsed since they became members of the Society.

The Secretary explained that all annual memberships expired on the thirty-first day of December of the year of admission, unless previously renewed, which those gentlemen had neglected to do as yet.

Messrs. Buck and Dunning, in answer, stated, that their understanding of an annual membership was a membership of three hundred and sixty-five days, beginning on the day of admission of the member, and ending one year from that time.

And some further discussion having taken place, Hon. Thomas T. Whittlesey, of Pheasant Branch, offered the following Resolution, which was adopted, to wit:

Resolved—That those persons who have paid one dollar for membership, during the year 1851, be allowed to vote by courtesy, at this meeting; but that hereafter, the fiscal year of the Society, begin on the first day of January, and all annual memberships expire on the 31st day of December previous.

And several gentlemen having voted, the result of the ballot was announced as follows:

Whole number of votes cast, 61; necessary to a choice, 31.

The Hon. Henry M. Billings, of Highland, having received 58 votes, the same being a majority of all the votes cast, was declared by Hon. William F. Tompkins duly elected President of the State Agricultural Society for the ensuing year.

Mr. Billings, in a few appropriate remarks, returned his thanks to the Society for the honor conferred upon him, pledging his services and labor in its behalf during the coming year, and giving the assurance that he would lose no opportu-

nity to advance and promote its best interests, and the best interests of the cause for which it was laboring.

Hon. Andrew Palmer, of Janesville, moved that the Society elect the remainder of its Officers *viva voce*, which was carried; whereupon N. B. Clapp, Esq., of Kenosha, was nominated for Vice President, from the first congressional district, by S. M. Booth, Esq., of Milwaukee.

Orrin Densmore, Esq., of Emerald Grove, was nominated for Vice President, from the second congressional district, by Isaac Woodle, Esq., of Janesville.

Martin Webster, Esq., of Fox Lake, was nominated for Vice President from the third congressional district, by Hon. Thomas R. Mott, of Watertown.

And the question being put upon the several nominations, they were declared unanimously elected.

Albert C. Ingham, Esq., of Madison, was nominated for Recording Secretary, and also for Corresponding Secretary, by Beriah Brown, Esq., of Madison.

And the question being put upon the nomination, he was declared unanimously elected.

Hon. Simeon Mills, of Madison, was nominated for Treasurer, by A. Hyatt Smith, Esq., of Janesville.

And the question being put upon the the nomination, he was declared unanimously elected.

Messrs. Warren Chase, of Fond du Lac; E. B. Dean, jr., of Madison; S. S. Daggett, of Milwaukee; H. B. Hawley, of Milford; and Jacob D. Merritt, of Grant; were severally nominated, and declared elected as additional members of the Executive Committee.

Hon. E. B. Dean, jr., of Madison, introduced the following Resolution, which was adopted, to wit:

Resolved—That the unanimous and sincere thanks of this Society be, and the same are hereby cordially tendered to Albert C. Ingham, Esq., the able and efficient Secretary of this Society, for his labors during the past year, and for the valuable services he has rendered in the organization and carrying out of the objects of the Society.

Hon. Andrew Palmer, of Janesville, offered the following Resolution, which was adopted, to wit:

Resolved—That the Secretary be, and he is hereby authorized to procure the printing of the Transactions and Correspondence of the Society for the past year.

On motion of S. M. Booth, Esq., of Milwaukee, the Society adjourned.

HENRY M. BILLINGS,
President.

Madison, January 21st, 1852.

REPORT OF SECRETARY.

To the Wisconsin State Agricultural Society:

The Secretary of the Wisconsin State Agricultural Society would respectfully report, that in accepting the office to which he was elected at the formation of the Society in March last, he felt great diffidence and lack of confidence as to his ability to discharge the duties which devolved upon him, in a manner that would meet the expectations and wishes, and redound to the best interests of the Society. The experiment of sustaining a State Agricultural Society in Wisconsin was one of doubtful utility; similar organizations among us had met with a failure, and by many, any further attempt was regarded as premature, and injurious to the prospects for the final formation of a Society that should be of permanent and lasting benefit to the agriculturist. In the discharge of his duties, however, he has endeavored at all times to keep in view the important objects for which the Society was organized, and in every suitable manner to advance its best interests.

In accordance with this purpose, and acting upon what he conceived to be required by the wants of the Society, immediately after its formation he opened a correspondence with numerous intelligent gentlemen, eminent alike for experience and skill in both this and other States, in relation to the course to be pursued and the plans to be adopted by this Society, in order best to carry out and accomplish the great ends of its formation. Organizations in many respects similar to our own, have long had a being in several of the older States of the Union, and to their influence may be traced much that is of value in the improvements so manifest in those parts of our confederacy. To profit from their experience, and to learn wisdom from their example, is the special duty of this Society. Organized in a new State, with a sparse population, our farmers nearly all in moderate circumstances and of limited means, suffering under the failure of our staple crop for the past three years, and in a time of unexampled pecuniary disaster, and agricultural depression, we have no time to wait for a long preparatory training; and it has become to to us a matter of necessity, that this Society—Minerva like—shall at once step from birth to maturity.

This may be accomplished in a great measure by availing ourselves of the labors of others, and to this end have the efforts of the Secretary been especially directed. In many instances these efforts have met with a hearty response; but in others, the difficulty of obtaining the proper address, and the shortness of the time intervening from the commencement of the correspondence up to the present time, prevents any adequate results being as yet attained. The carrying

out and extension of these plans must, therefore, be left to the Corresponding Officer for the next year.

In our own State the labors of the Secretary have been especially directed to the collection and diffusion of information upon the present agricultural condition of the various counties—their soils and crops—manner of cultivation—adaptation to tillage as compared with grazing—and the various other details of the systems of husbandry practised therein. To this end he has addressed letters of inquiry to various gentlemen in each county, soliciting correspondence and information, and inviting suggestions for improvement. This effort has met with partial success; but in many instances the Secretary has to announce with regret, that the efforts of the Society have met with no return. That this is caused by carelessness, or the want of interest, he is loth to concede; but surely the Society, acting as it does gratuitously, has the right to expect from those enjoying the fruits of its labors, that they will impart, not from their purses, but from their stores of experience and observation. The value of these contributions does not end with the present. In future times they will form a portion, and no valueless portion, of the history of the past. In this respect we are possessed of a peculiar advantage—we are young—our State is in its infancy; and, as a distinguished laborer in this common field has remarked, "it is pleasant to believe that when the substitution of higher and improved systems of husbandry shall enable our country to sustain the dense population which will one day inhabit it, our posterity will revert with gratitude to the labors and efforts of those who were the pioneers in these improvements." "And he who from his superior experience, more extended observation, scientific acquirements, or skill in tracing effects to causes, is competent to point out the steps to such improvements, and 'to show how two blades of grass may be made to grow where only one grew before'—should never refuse to impart the knowledge to those who are less fortunate, or less sagacious." Many contributions, however, have been received which are of value; and to those gentlemen who have so kindly furnished them, the thanks of the Society are due. While the papers herewith submitted, may be found wanting in many points of interest and importance, it is indeed a triumph for us, and one over which we may well rejoice, that we have succeeded as well as we have, amid such untoward circumstances. We may, indeed, confidently anticipate, that another year we shall meet with still greater success, and still more encouragement to persevere in the efforts which we, as a Society, have undertaken.

As another means of arousing the attention of the agriculturists of the State to the efforts being made by the Society, the Secretary, under the direction of the Executive Committee, spent some time during the past summer in visiting the various counties of the State, and endeavoring by various means to excite an

interest therein, and to secure the active co-operation of intelligent and influential citizens with the Society. The result proved extremely gratifying; and with pleasure the Secretary has it to report, that in no instance did he fail to receive the kindest treatment and co-operation at the hands of all. In some parts of the State, a misapprehension of the objects of the Society seemed to exist; and, as a consequence, a feeling of coldness was apparent, but this soon yielded before the proper statements and explanations, and the kindest feeling seems now to prevail—indeed the Society has emphatically become the favorite.

It is with much pleasure that the Secretary is enabled to announce that he has obtained, through the medium of our Senators and Representatives in Congress, the promise of a large supply of native and foreign seeds, of choice varieties; these, as soon as received, will be distributed among the members of the Society, under the direction of the Executive Committee.

The prospect of the establishment of an Agricultural department in our State University, is a matter of encouragement; and it is to be hoped that no very long period will elapse, before an opportunity will be afforded for those who desire to acquire that instruction which will fit them to excel in the profession they have chosen.

The undersigned is conscious of having imperfectly discharged the duties of his position; but he bears with him the consolation, that he has devoted his best energies to the advancement of the interests of the Society; and although he has not accomplished all that he has desired, or all that might have been done, yet in all his efforts he feels that he has been actuated by a sincere desire to promote the great interests of Agriculture, those interests which are second to none other in our State.

Respectfully submitted,

ALBERT C. INGHAM,
Sec. of the Wis. State Agr. Society.

TREASURER'S REPORT.

To the Wisconsin State Agricultural Society:

The Treasurer of the Wisconsin State Agricultural Society would respectfully report, that the whole amount of funds received into the Treasury of the Society for the year ending December 31st, 1851, is as follows:

From Life Members	$50 00
From Annual Members	388 00
From Miscellaneous sources	127 00
From Interest on Funds	5 31
Total Receipts	$570 31

The Expenditures for the same time have been as follows:

For Premiums and Diplomas awarded at late Fair	$140 00	
Expenses of the Society incident to the Fair	179 00	
Contingent Expenses for the year	165 86	
Total Expenditures		484 86
Balance in Treasury, December 31st, 1851		$85 45

By an arrangement entered into with the Rock County Agricultural Society the proceeds of the sale of tickets of admission to the show grounds at the late State Fair, were to be applied, under the direction of that Society, first—to the payment of the expenses of the grounds—and after that, the balance was to be divided equally between the two Societies. By this arrangement this Society received $127 00 as its share of the receipts.

All of which is respectfully submitted,

C. ABBOTT, *Treasurer.*

MADISON, January 21st, 1852.

We, the undersigned, having carefully examined the foregoing Report and the vouchers therefor, do hereby certify that the same is correct, and that the amounts are correctly stated.

HENRY M. BILLINGS,
ANDREW PALMER, } *Auditing Committee.*

MADISON, January 21st, 1852.

CORRESPONDENCE.

COUNTY AGRICULTURAL SOCIETIES.

The Reports of the County Agricultural Societies herewith presented, while they are not as full as could be desired, will yet not be found wanting in interest. The newness of the country, the sparseness of the population, and, in many instances, the inexperience of those engaged in these associations, while it has materially lessened the value of their labors, has yet demonstrated that the industrial classes of our State are not content to tread in the beaten track of their forefathers, but are earnestly seeking for improvement. In most of the counties wherein Agricultural Societies have been formed, the formation has been of very recent date, and therefore no striking result can reasonably be anticipated. The importance of these Associations to the cause of agricultural improvement can hardly be estimated. The operations of the State Agricultural Society, covering as it does the entire State, must of necessity be somewhat general in their character; and from the enlarged field of its labors, but little attention comparatively can be paid to the details of local and neighborhood improvement; these must therefore mainly be left to the fostering care of the County Societies.

The County Societies, for the sake of uniformity, adopting the plans recommended by the State Agricultural Society, should annually send up full statements of their operations and researches, which becoming disseminated throughout the State through the medium of the Society's Transactions, could not fail to produce a most salutary effect through the information thus imparted, and in the spirit of friendly emulation thus aroused. Another source of improvement arising from these Associations is found in the assembling together of the intelligent and enterprising farmers of the county. Local feelings and prejudices are thus broken down, a mutual comparison of views takes place, the improvements which have been and are being made in the various branches of husbandry, are carefully observed and closely studied, and the minds and feelings of all become enlarged and liberalized, fitting them not only for improvement in agriculture, but making them better citizens and better men. At these meetings the wall of prejudice which has so long separated them from other classes in community is destroyed, and they are made to place a proper value upon their own labors, and to assume their just position in the estimation of others.

The State Society is not independent of the County Societies, and neither are the County Societies independent of the State Society. They are co-laborers with it, and though the operations of the one are more enlarged than those of the others, yet they are all parts of the same system, all having one common object, and all equally important in their respective stations.

COLUMBIA.

During the session of the Board of Supervisors of the county of Columbia, held at Fort Winnebago, in the month of November, A. D. 1851, it was proposed by some of the members of the Board to form a County Agricultural Society; and for this purpose, after notice had been given, a meeting was held on the evening of November 18th, 1851, at which time a Constitution was adopted, and officers were elected.

The officers are as follows:—President, Jesse Van Ness, West Point; Vice-Presidents, Joseph Kerr, Randolph and T. C. Smith, Columbus; Recording Secretary, John A. Byrne, Otsego; Corresponding Secretary, Henry Converse, Wyocena; Treasurer, F. C. Curtiss, Lowville.

No further returns have been received from this Society.

DANE.

"The Dane County Agricultural Society" was fully organized on the 13th of September, 1851; the articles of Association require an annual meeting of the Society to be held at Madison, (unless otherwise ordered,) on the first Wednesday of October in each year, at which time and place a Cattle Show and Fair is to be held. Special meetings may be called at any time on two weeks notice.

The following is a list of officers of the Society for the current year, viz.:—President, Thomas T. Whittlesey; Vice-Presidents, N. J. Tompkins, William H. Fox, Jonathan Larkin, Philo Dunning, Charles Wilson, and George Anderson; Treasurer, Jehu H. Lewis; Secretary, Robert L. Ream; Standing Committee on Premiums, Joseph A. Payne, James R. Larkin, and Philo Dunning.

The Society has held several interesting meetings since its organization, and is rapidly increasing in numbers. The Agriculturists of this county, I am happy to inform you, are awake to their true interests, and we promise you that our first annual exhibition in 1852 will be second to none in the State.

Very respectfully yours, &c.

ROBERT L. REAM,
Sec. Dane Ag'l Soc.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Ag'l Soc.

IOWA.

On the 10th of June, 1851, a number of citizens and farmers resident in the neighborhood of Mineral Point, assembled at that village, in consequence of a public call having been made upon them, in order to ascertain the feasibility of establishing an Agricultural Society with an annual Exhibition and Fair, for stock, articles of domestic manufacture, implements of husbandry, mechanical productions and improvements, and all the cereal crops of the agriculturist. At this meeting there were a number of horses and cattle of excellent breed, and in fine order, brought to the ground; and from the general good feeling on the subject of the organization of an Agricultural Society for the county of Iowa, as expressed at this meeting, it was determined by the citizens and farmers then present, that an adjourned meeting should be held at the Court House, in Mineral Point, on Saturday, July 19th, 1851, for the purpose of completing an organization of the "Iowa County Agricultural Society," and a Committee consisting of Gen. Wm. R. Smith, Hon. Mortimer M. Jackson, Samuel Crawford, Montgomery M. Cothren, Henry M. Billings, John Hand, H. L. Leffingwell, Levi Sterling and George Goldthorp, was appointed to report "Articles of Association, Rules and Regulations of Premiums, and nomination of officers of the contemplated Society."

On Saturday, July 19th, 1851, the first meeting of the Society was held at Mineral Point, at which meeting Francis J. Dunn, Esq. presided; and General Smith was appointed Secretary.

The Committee appointed to report Articles of Association, Rules and Regulations of Premiums, and nomination of officers of the Society, made Report by their chairman, Wm. R. Smith, of the "Articles of Association of the Iowa County Agricultural Society," which were severally considered, amended, and unanimously adopted.

By these articles the Society was to be organized by the election, yearly, of a President, six Vice Presidents, a Secretary and Treasurer; and their several duties were prescribed. The members were to consist of such persons as should pay into the treasury the sum of one dollar annually: a failure to make such payment would work a forfeiture of membership. All persons competing for premiums at any Exhibition or Fair of the Society, would be admitted as members of the Society for the time, on payment of one dollar into the treasury; and this payment was made imperative on the person so competing for premiums.

Two semi-annual Cattle Shows and Fairs were to be held in each year, at Mineral Point, or elsewhere, in the county of Iowa, as might be determined on by a vote of the Society. The prescribed days for holding such Shows and Fairs are the second Fridays and Saturdays in the months of May and October in each

year. At such Exhibitions premiums are to be awarded by the several Committees to be appointed for such purpose, for horses, cattle, sheep, swine, jacks, mules, farming implements, articles of home manufacture, crops, and the productions of the dairy; miscellaneous articles not embraced under any of the above heads, were also constituted the subject of premiums at the discretion of the Committees. The several rates of premiums in money were established, and the distribution of diplomas and certificates was provided for. It was also determined that for the second best of any article exhibited, a premium might be awarded at the discretion of the Committees, consisting of an approved work on Agriculture.

The same Committee also made report of the nomination of officers of the Society, and the following named gentlemen were unanimously elected:

President, H. L. Leffingwell; Vice Presidents, Henry M. Billings, Levi Sterling, Patrick O'Dowd, John Hand, Francis J. Dunn, George Goldthorp; Treasurer, Samuel Crawford; Secretary, William R. Smith.

Provision was also made for the delivery of an Annual Address by some member to be appointed by the Society. F. J. Dunn was appointed to deliver the first Annual Address.

The meeting was then adjourned until the second Friday in October.

On Friday, October 10th, 1851, the Society held its first semi-annual Fair and Cattle Show, at Mineral Point; the several Committees on eight classes of premium articles were appointed. On five of these namely,

1. On horses, jacks, and mules.—2. On cattle.—3. On sheep and swine.—4. On farming implements—and 8. On miscellaneous articles. The several Committees made reports, awarding to the exhibitors, in the aggregate, the sum of ninety dollars in money, and also several certificates of merit. The other three Committees, namely—5. On domestic manufactures.—6. On crops—and 7. On dairies; did not report on account of the non-exhibition of articles coming under these heads.

At this Agricultural Fair there were sixteen competitors for premiums in the first class, viz., horses, jacks and mules. Six competitors in the second class, viz. cattle. One exhibitor in the third class, viz. sheep and swine. Three competitors in the fourth class, viz. farming implements. Four competitors in the eighth class, viz. miscellaneous articles. Several productions of the garden were exhibited, and the Committee deemed all in this class entitled to certificates of merit.

The Society then adjourned without day.

It was a source of gratification to the friends of the Society, and the citizens generally, equal perhaps to the satisfaction felt by all the members of the Association, to observe at this first exhibition, the very numerous fine horses, mules, and cattle, that appeared on the ground. The very superior stock of Durham short-horns, raised and exhibited by Mr. Joseph H. Van Meter, of the town of

Waldwick, admitted of no competition on the ground. He received no less than seven distinct premiums on his stock according to the classification of the Committees. Several valuable grade cows and calves received premiums; and the horses, mares, colts and mules exhibited, would have reflected much credit on any agricultural and cattle show in any part of the Union. Perhaps in no part of Wisconsin, and in very few parts of the United States, will be found a superior breed of horses for the turf, the draft, or the farm; and cattle of the full, and mixed Durham, Devon, and other valuable breeds, than is to be found in Iowa county, and particularly in the vicinity of Mineral Point. It was much to be regretted that no specimens of the very superior stock of Mr. Thomas Ansley, and Mr. Francis J. Dunn were exhibited at this time. It is well known, not only in Wisconsin, but wherever a turf register can be inspected, that Mr. Dunn's breed of horses are the best in the United States, and his breed of cattle and swine would confer great credit on any raiser of stock in the country. It is to be hoped that, at a future exhibition of the Society, the whole farming community may receive the benefit of examining the stock of those gentlemen, and reap the profit of their excellent and deserving example.

At some future Show and Fair we may reasonably expect to see many of the various shrubs, fruits, and flowers, from Barnham gardens, the residence of Mr. John Hand, at Dover, in Iowa county, near the Wisconsin river. Mr. Hand is a professed horticulturist, and his productions of fruits, flowers, and garden seeds, have deservedly made Barnham gardens, as well as the gardener, well known to all the surrounding counties.

In the county of Iowa, situated in the heart of the lead-bearing region, it might have been expected to see statements laid before the Society, of the mineral production of the soil. As a general remark, it may be observed, that the late emigration to California has, within two years, taken from the labor of the mines more than three hundred industrial producers. Such a deprivation would be felt in any community, where the product of the soil was a great item in the source of wealth. The neighborhood of Mineral Point, and in truth all Iowa county, has seriously been affected in their condition of prosperity by the emigration alluded to, although the mines are in no worse condition than they were two years since, and mineral has commanded an average price of $21 per 1000 lbs. during the past year. But the labor which has left the mines, must be replaced by other producers of mineral, to insure any continued prosperity; or perhaps it would be more conducive to permanent wealth, that the attention of the whole community should be immediately directed to the cultivation of the soil and the raising of stock, as the surest foundation on which an industrious people might build their hopes of ample remuneration.

A few observations on the crops of Iowa county during the last year might,

with much propriety, have been laid before the Association. They may still be considered as a component part of their proceedings, as they have lately been communicated to me by Hon. Henry M. Billings, Vice President of the Association.

Winter Wheat.—This crop has been gradually failing for the last five or six years, owing more to bad cultivation than any other cause. The average crop this year (1851) is fifteen bushels to the acre; a few fields have yielded twenty-five or thirty bushels. The kinds are, the common white, and red chaff—bald and bearded—the Mediterranean, and Hutchinson; the two last have proved to be much the best. Our winter wheat is liable to spring kill in the month of March, by freezing, and thawing, and dry cold winds. This may be prevented by proper cultivation—deep ploughing, thorough harrowing or rolling, or by drilling, and by early sowing, the latter part of August, or first part of September.

Spring Wheat.—The average crop this year (1851) twelve bushels per acre. Kinds grown—black sea, red river, common white and red chaff—bald and bearded—hedge-row, and Canada club. This last received a premium at the State Agricultural Fair, and is a very fine wheat. The hedge-row was an entire failure; very few of the fields harvested—they were affected by what is called the spot.

Oats.—This crop was very heavy this year (1851); average sixty bushels per acre. Many of our oldest farmers have very much reduced their lands by continuous cropping; they have seen their error, and are now adopting the system of rotation of crops.

Barley.—This has become quite an important crop; average thirty bushels per acre this year (1851.)

Buck-Wheat.—Few farmers cultivate this grain; the average crop this year (1851) twenty-five bushels per acre.

Corn.—This great and important staple crop of our country, which is depended on for stock feed, is light compared with former years; the usual crop then was, from forty to fifty bushels per acre; this year (1851) the average crop was only twenty five bushels per acre, owing to a cold wet spring, and an extremely wet summer.

Potatoe.—This crop was an entire failure from rot, except in the sandy lands bordering on the Wisconsin river, where the rot did not appear.

Ruta Baga.—This esculent yields well, and is an important crop; average five hundred bushels per acre.

Roots.—These succeed and grow well, of all kinds.

WILLIAM R. SMITH,
Sec. of Iowa County Agr. Society.

To the Executive Committee of the State Agricultural Society.

KENOSHA.

Dear Sir—In reply to your letter requesting the same, I will give you the rise and progress of the Farmer's Club, and of the Kenosha County Agricultural Society, growing out of the same.

January 3, 1850, a few of us neighbors (farmers) met at the tavern then kept by Peter Martin, in the town of Pleasant Prairie, (some dozen persons in all,) and formed ourselves into a club known as the "Farmers' Club of Kenosha County," having for its object mutual benefits in Agriculture, by consultation and interchange of opinion on that subject exclusively. This I believe to be the first agricultural association in Wisconsin, and it remains still in existence. That Club met, and still meets weekly during the winter months. The meetings usually begin with a dissertation from some member; on each evening two Committees are appointed to visit the farms of certain members previously selected, and at the next meeting report their condition, &c. After these Committees have reported, any member may propose a subject for investigation, or ask any question he pleases of the Club, to which any member can reply, &c. The Club is then free and easy, and any or all talk who wish, one at a time of course. The first President was Hiram Marsh, of Pike, (now Somers,) and the first Secretary was Henry Johnson, of the same place; the latter resigned some little time thereafter, and his son, Hiram Johnson, was chosen to fill his place, and still holds the office. Leonard Crocker, of Somers, is now President. The fee for membership is one dollar for life, subject to assessments when funds are required. They have a good library, and considerable interest is kept up.

At a meeting of the Club in the spring of A. D. 1850, it was resolved "That this Club use all its exertions to form a County Agricultural Society."

In pursuance of this resolution, a meeting was called at Jackson's tavern, in the town of Bristol, on the third day of June, A. D. 1850, at which Z. P. Rich, of Paris, was called to the chair, and T. J. Rand was elected Secretary. A Society was then formed; and twenty-four farmers enrolled their names as members. The following persons were elected as officers, to wit:

President, Henry Johnson, of Somers; Vice Presidents, Thomas Slade, of Wheatland, and Lathrop Burgess, of Brighton; Recording Secretary, T. J. Rand, of Pleasant Prairie; Corresponding Secretary, A. B. Jackson, of Bristol; Treasurer, George S. Blackman, of Paris.

The Society has from that time held quarterly meetings, at which much interest is manifested. The first Fair came off at Jackson's tavern, in the town of Bristol, on the 10th day of October, A. D. 1850, but under very unfavorable circumstances; it had rained for two days, as also on that day, and it was almost impossible to get along for mud. Driving cattle was almost out of the question;

still there was a fair show, and about six hundred persons were present. There were at this time ninety-eight paying members. Premiums were awarded; a farmers' dinner, speeches, &c., filled up the business of the day.

The next operation of importance was an Exchange Fair, held at Dalton's tavern, in the town of Paris, on the twenty-fifth day of February, A. D. 1851. The object of the Fair was the exchange and purchase and sale of any and all agricultural or mechanical productions. Grains were sold by sample, farming utensils, cattle, horses and sheep, were also bought and sold, or exchanged, as the parties might agree.

This was considered one of the best and most useful features of a county Agricultural Society; but here again this Society was unfortunate in the weather, which had been stormy, with very bad travelling. There was, however, an attendance of some seven hundred or eight hundred persons, and considerable business was done. This kind of a Fair rose high in the estimation of all concerned, as productive of more real good than any Show and Fair that can be got up, as almost all attend for some real interest, one wishing to sell, and another wishing to purchase.

The annual meeting of the Society is held in June. At the last annual meeting the following officers were elected for the fiscal year, to wit:

President, Samuel R. McClellan, of Wheatland; Vice Presidents, Nathaniel B. Clapp, of Somers, and Luman Marsh, of Paris; Recording Secretary, T. J. Rand, of Pleasant Prairie; Corresponding Secretary, Levi Grant, of Bristol; Treasurer, Harvey Durkee, of Kenosha.

This Society held its Annual Fair at Wood's tavern, in the town of Bristol, on the twenty-third and twenty-fourth days of September, A. D. 1851, at which time there was a very good show of agricultural and mechanical productions. It was estimated that two thousand persons visited the Fair. On the second day four hundred persons sat down to dinner, and afterwards listened to a very eloquent and instructive Address from the President. The premiums were then declared, which closed the exercises.

There were two hundred and thirty-eight offers for premiums. The first premiums varying from two dollars to five dollars; the second awards were paid in agricultural and horticultural books: and I would here remark, that the books, as premiums, gave more general satisfaction than money, the former being kept and preserved as a memento, while the latter is expended and forgotten. Judging from the general expression of those who received these, I am of opinion that good standard works on agriculture, horticulture, and mechanics, would be estimated as more valuable than any other award, as it results in placing practical works in the hands of many who would not otherwise have them, and not unfrequently opens a spring whence flows a stream of intellectual water, that will

refresh and irrigate a vast extent of dry and parched soil, and will give it life and vigor.

We have now about two hundred regular members of this Society, and great zeal is manifested. Our meetings are well attended, and interesting subjects are discussed, rendering this Society not only agricultural but intellectual; and if it were not for the pressure of the times, and the migrating disposition at present prevalent among us, we should muster a Society of five hundred members at least. If you should require any further information I shall be most happy to furnish it.

Yours very truly,

T. J. RAND,

Sec. of the Kenosha Agr. Society.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

ADDRESS OF DR. SAMUEL R. McCLELLAN,

PRESIDENT OF THE SOCIETY,

Delivered before the Kenosha County Agricultural Society, at its Annual Fair, held September 23d and 24th, A. D. 1851.

Ladies and Gentlemen:

By the by-laws of the Agricultural Society of the county of Kenosha, it is my duty to address you.

We have met under circumstances at once novel and interesting; novel, from the fact that not one of us who are here participating in this agricultural exhibition is a native of the soil we inhabit.

We have come not only from the several States of the American Union, but almost every country of Europe has here its representatives. From the green Isle of Erin—they are here; from the chalky cliffs of England—they are here; from the high lands and the low lands of Scotland—they are here; from the sunny banks of the Rhine; from the vine-clad hills of France; yea, and from the ice-bound coasts of Sweden, and of Norway—they are here; presenting the interesting spectacle of a people dissimilar in language, education and habits, harmoniously uniting for the upbuilding of a sovereign state under the broad banner of republican independence.

A practical commentary, this, on man's capacity for self-government.

Our progress hitherto has been unrivalled.—A few short years ago, our fields, now waving with the golden harvest, lay in all the original solitude of Nature,

undisturbed by the foot of man, save the occasional stealthy tread of the red man of the forest.

Now how changed the scene—our hill tops and our prairies dotted all over with comfortable dwellings; school houses in every neighbourhood; cities have sprung up along our borders; internal improvements going on to successful completion; the magnetic telegraph, the great *par vagum* of the body politic, has shot across the trail of the savage; commerce is pouring in upon us the products of other climes, and we are enjoying all the blessings of a refined civilization.

Whence all this prosperity? These unequivocal signs of progress? The foundation of it all is Agriculture. It is Agriculture that freights our steamboats, swells the sail of commerce, pays for our imports, nerves the arm of our mechanics.

Without Agriculture, mankind would be savages, thinly scattered through interminable forests.

Yet, notwithstanding its vast importance in a physical point of view, to the well-being of the human race, the science of Agriculture has been the last to feel the influence and receive the impulse of our modern crusade after light and knowledge. It is true, poets have sang the praise of agriculture from the time of Virgil down to the present day; politicians have been enthusiastic in their admiration of it, and have taken great pains to shake hands with the hard-fisted yeomanry, particularly on the eve of an important election; executive messages from year to year are regularly interlarded with eulogies upon it; and yet, for all this, nothing has been done by legislative enactment to raise it to a level with the other sciences. The State has done nothing for the education of its children for farmers. It is true, we have in prospect an ample school fund, but no law regulating its application. Our children should be educated with reference to the business they are to follow. Chemistry, Geology, Botany, and their kindred sciences, should be taught in our common schools.—The State should lend its aid in furnishing the necessary books and apparatus, and in other ways; in our University an Agricultural department should be established, this would do much to elevate the standard of agricultural education.

I am willing to admit the fault is somewhat our own, for a lack of unity of purpose and of action, and of earnest demands for our rights.—Nor do we expect good farmers can be made by legislative enactment; but it is nevertheless true that the aid and patronage of the State would tend to elevate and encourage agriculturists, and enable them to take rank among the most intelligent, as they are now among the most virtuous.

From our State Agricultural Society a vast amount of benefit is to be anticipated—their transactions, it is to be hoped, will be liberally distributed; and there is no doubt but that they will be sought for with avidity, and perused

with care; they will create discussions, and lessons of practical utility will be inculcated; they will have a tendency to excite an appetite for agricultural and horticultural knowledge, and induce thinking, reasoning men, to examine more attentively the pages of those works devoted to the interest of the farmer.

Although our occupation has in it much of toil and labor, it has likewise much of pleasure and enjoyment.

The inhabitants of cities live in a constant state of feverish excitement—every event that happens on any point of the globe's surface is transmitted to them like an electric shock, the consequence is, a morbid sensibility is generated throughout the whole community; the nervous system is unstrung; predisposition to disease ensues, which lays them at the mercy of almost every breath of heaven.

Not so with us—in the retirement of our homes we are exempt from the daily shocks which agitate a mercantile community.

Necessary labor invigorates our physical constitutions, and we realize, nearer than any other class, the blessings for which the prophet of old prayed for, when he said, "Give me neither poverty nor riches." And if our gains are small, we feel that they are secure, not liable to be swept away by the next arrival from Europe, or the next telegraphic dispatch.

The farmer who with a philosophic eye can watch the development and growth of his domestic animals, and trace the progress of vegetation from the bursting of the bulb to the perfection of fruit, is in possession of sources of enjoyment to which the denizen of a city is a stranger.

In the economy of vegetation alone there is enough to claim our unceasing wonder and praise.

Though discord may pervade human organizations and thwart their ends, it never interferes with the operations of the Deity, whose works are characterized by perfection of movement in all their parts, each atom fulfilling its proper destiny.

It is the happy province of the agriculturist to watch and study the operations of this mechanism, and when, by the aid of science, he can comprehend its simplicity and perfection, there is a charm thrown around his pursuit commanding his most fervent admiration and praise.

The infinite variety interwoven in earth's garland, from the humble lichen that clings to the sterile rock, to the lofty tree whose towering branches shelter us from the noon-day sun, affords numberless examples of wise adaptation, all tending directly or indirectly to promote the progress and prosperity of man.

And when we reflect upon the great variety of plants, some of which are adapted to the particular wants of each species of animal and insect, during every successive period of their existence, we are overcome with a mute feeling

of awe and adoration that ascends upward to the Great first Cause; and the farther we investigate, new developments and discoveries are opened out before us, some of which have, and others promise to effect great and beneficial changes on civilized society.

The time was when that valuable tuber, the potatoe, which has added millions of lives to the densely populated countries of Europe, grew only in the unknown regions of South America. The time was when that important crop to us, the Indian Corn, was known only to the red man of this western world. The time was when the coffee plant, which now furnishes the civilized world a most delicious beverage, grew only on the mountain slopes of Upper Ethiopia and Arabia Felix, its merits all unknown; and, perchance, there now dwell in obscurity plants that future generations may marvel that we could dispense with.

Again, when we reflect upon the improvements already made in the vegetable kingdom by cultivation, we are lost in wonder and admiration.

For instance, in the culinary department, the cabbage, a species of the genus Brassica, that now finds a place in every farmer's garden, was once a nauseous bitter plant growing wild upon the sea coast; and so of fruits, when we feast upon the luscious plumb, or the rich and juicy apple, we should reflect that these are the offspring of scientific cultivation derived originally from the wild stock.

I might go on and enumerate, but time would fail me did I attempt even a sketch of the progress of improvements, made by cultivation in the vegetable kingdom.

Again, the same law of progress is observable in the animal kingdom, but as it would require volumes to trace it out, I shall not attempt it at this time, it is a subject of interest, and I would commend it to the consideration of every farmer.

In view of the importance of these subjects, we feel our mutual dependance; we see the benefit of associating ourselves together, and lending our aid to Agricultural Societies, and should reflect while so doing we are advancing our favorite pursuit.

These periodical meetings of farmers afford a valuable opportunity for an interchange of sentiment, and often hints of great practical importance are thrown out and treasured up to be acted on at our future convenience, the result of which is the upward and onward tendency of the science of agriculture.

It is gratifying to reflect that Kenosha County was the first in the State to form an Agricultural Society. I look upon it as an evidence of our progress in the method of conducting our farming operations, and feel confident that the result will be productive of still farther improvement beneficial to ourselves and to the community in which we live, since it is a duty we owe to ourselves and to our profession, not only to keep pace with the improvements of the age, but to add something to the stock of knowledge already acquired.

Hitherto we have had the benefit of a virgin soil, that yielded its products with comparatively little labor, but in the last two years we have received a check that should prove a salutary lesson to us.

The failure of our great staple, calamity as it is, may be the means of making better farmers of us—we have followed this one idea until we have literally run it into the ground—we have depended upon one product almost to the entire neglect of all others.

Now, if we would place our agricultural interest upon a permanent basis of prosperity, we must retrace our steps, diversify our labor, and direct our energies to the production of every article of value of which our climate and soil will permit; in short, we must pursue a more mixed system of agriculture.

It is generally conceded that we have carried our farming operations to an unprofitable extreme; it is not necessary for us to hack and scratch over our whole farms as an evidence of title.

By cultivating well those parts naturally the most fertile, and laying the remainder down to permanent pasture, we shall thereby derive an annual profit requiring but little labor.

The ancients illustrated the importance of thorough tillage by the following apologue: A vine-dresser had two daughters and a vineyard; when his oldest daughter was married he gave her a third of his vineyard for a portion, notwithstanding which he had the same quantity of fruit as formerly; when his youngest daughter was married he gave her half of what remained, still the produce of his vineyard was undiminished.

This result was the consequence of his bestowing as much labor on the third part left after his daughters had received their portions as he had been accustomed to give to the whole vineyard.

It is a well established fact that all soils lose a portion of their productive powers by constant cropping, unless as much be returned to the soil as is extracted from it.

It is true, by a judicious rotation of crops we may succeed for a while, but eventually we shall be obliged to resort to manure or some other method of fertilization.

Permit me to commend to your favorable consideration wool growing as a rotation and fertilizer that combines favorably with other interests.

I know this recommendation is unnecessary to many members of this Society, as the splendid specimens of sheep here exhibited will amply testify; but I would like to have the subject appreciated by the whole farming community.

I am fully of the opinion, that a field well sheeped and once ploughed is better fitted for a crop of wheat than with any number of ploughings without the sheep.

A writer on this subject, in the Patent Office Reports, says, sheep are to be admired for various reasons, for the warm and healthy article of clothing they produce, for their valuable mutton, for their ability to produce two crops in one year, viz., wool and lambs, for their quietness, and for various other reasons. Unlike other animals they have no disposition to injure one another, the stronger will not oppress the weaker, and the stranger may eat at the same rack. In this respect what a valuable lesson is taught the shepherd by his flock, a sheep may die in debt to his purchaser, but it cannot to him who raised it. The reason for this is plain. It pays all charges once a year, and the moment it has settled for arrearages it commences to accumulate at a rate which is sure not to fail wherewithal to meet the next annual settlement, and die when it may, it always leaves a fair compensation to its owner for what little it has consumed of his substance. Notwithstanding the opinion of some men to the contrary, sheep are a greater benefit to a farm than any other stock I have ever kept. They will turn thorns, and briars, and noxious weeds, (curses pronounced on Adam and his seed,) into useful substances, and in the end cause them to become extinct and valuable grass to grow in their stead.—Thus do they lighten the toils of man—thus do they turn the curse into a double blessing—yea a treble; his thorny fields into green rich pastures, into warm clothing for his body, and into wholesome food for his subsistence.

One other subject before I close, it is this, I would suggest to you the propriety of petitioning the legislature for a law establishing a State Board of Agriculture; also an Agricultural Board in each of the several counties, and to provide by law for the collection of the Agricultural Statistics of the State, through the instrumentality of the town assessors.

The great importance of information to be thus derived must be admitted by all. It would give us the condition of our whole State, and the comparative advantages of each county.

By this knowledge spread out before us, we could more readily avail ourselves of the benefits enjoyed by our sister counties, and impart to them any peculiar benefit possessed by our own.

From the several town reports a table could be compiled by the county board, and by them transmitted to the state board, exhibiting the principal products of the county, the number of acres devoted to the several crops, the quantity of seed per acre, and the cost of production from these data and others given; the profit derived from each crop could be ascertained and noted, both per acre and per bushel; this table should also embrace the number of horses, cattle, sheep and swine.

Various valuable inferences might be drawn from a careful examination of such a table, which would cost the State comparatively but a trifle.

In conclusion, in behalf of this Society I would thank the ladies who have participated in this exhibition for their presence and their co-operation with us in this, our peaceful and honorable pursuit; we feel that their influence and efforts are indispensible to our success, and that the education of our daughters is of no less importance than of our sons. And we appeal to mothers to strive to give them an education at once. Solid, useful, and practical, that shall fully prepare them to fill every appropriate station to which they may be called. This is emphatically a practical age, woman is restored to her natural rights, and is justly esteemed the ornament and refiner of society, the companion and friend of man.

Her influence, although not acknowledged, has controlled the acts of man in every age of the world; in the days of chivalry she presided over the sports of the tournament and bestowed the prize upon the successful knight; and at a still earlier period the poet tells us

"The world was sad, the garden was a wild,
"And man, the hermit, sighed till woman smiled."

RACINE.

In this county a Society has been organized and several meetings held, but no direct report has been received of its doings. A Fair was held during the past year, at which much enthusiasm was manifested, and the promise given that the Society would be well sustained.

ROCK.

The Rock County Agricultural Society was organized at a meeting held under a call for a convention of Farmers, to be held at Janesville, on Monday, January 6th, A. D. 1851, which call was signed by J. P. Wheeler, Esq. and Hon. Wm. F. Tompkins.

The meeting was organized by calling J. P. Wheeler, Esq. of La Prairie, to the chair, and appointing Orrin Densmore, Esq. of Bradford, Secretary.

The objects of the meeting having been stated in a brief address from the chair, remarks were made by several gentlemen.

On motion of C. C. Cheney, Esq. it was Resolved, that this meeting proceed to form an Agricultural Society for the county of Rock.

A Committee was thereupon appointed to draft a Constitution, which was subsequently adopted, and the following officers were elected:

President, J. P. Wheeler, Esq.; Vice Presidents, Messrs. Wm. F. Tompkins,

Ansel Dickinson, Orrin Densmore, Joseph Goodrich, James M. Burgess, and Anson W. Pope; Recording Secretary, Josiah F. Willard; Corresponding Secretary, Andrew Palmer; Treasurer, John Russell; and a Board of twenty Directors, being one for each town in the county.

By its Constitution it is provided that the Society shall hold an Annual Fair on the second Tuesday and the Wednesday following in October of each year.

Its first Fair was held at Janesville, at which the attendance and display was such as to surprise and delight all.

At the Annual Meeting held on the first Monday of December, A. D. 1851, the following gentlemen were elected officers for the ensuing year:

President, Hon. Josiah F. Willard; Vice Presidents, Messrs. Z. P. Burdick, John A. Fletcher, James M. Burgess, I. S. Love, John Winston, and Jesse Mills; Recording Secretary, Orrin Guernsey; Corresponding Secretary, John P. Dickson; Treasurer, John P. Dickson; and a Board of twenty Directors, being one from each town in the county.

The Society received during the year 1851, from all sources, the sum of $292 91. Its expenditures for the same time were, for premiums awarded and paid at its Fair, $166 00; for printing, stationery, &c. $40 00; leaving a balance in the treasury of about $86 00 to be carried to the credit of the next year.

SHEBOYGAN.

On the 9th day of April, 1851, a meeting of the citizens of Sheboygan county was held at Sheboygan Falls, for the purpose of organizing a County Agricultural Society. At this meeting officers were elected, and a Committee of one from each town in the county was appointed to report to the Society upon the soils of the several towns of the county.

At a subsequent meeting, held July 4th, 1851, a Constitution for the permanent government of the Society was adopted, and the following named persons were elected officers under its provisions.

President, Dr. J. F. Seeley; Vice Presidents, A. G. Dye, of Lima, and Hiram Smith, of Sheboygan Falls; Secretary, H. S. Anable, of Sheboygan; Treasurer, L. W. Davis; Executive Committee, Messrs. Huntington Lyman, of Sheboygan, Reed C. Brazelton, of Scott, S. Lombard, of Greenbush, B. L. Gibbs, of Lima, and N. C. Harmon, of Linden.

The Executive Committee subsequently fixed upon Wednesday and Thursday, the 24th and 25th days of September, as the time for holding the First Annual Fair and Cattle Show, and appointed the President, Dr. J. F. Seeley, to deliver the Address.

In accordance with this action a Fair was held at the appointed time and place, of which the Executive Committee thus speak:—"The result of the first Fair held in Sheboygan county, has more than equalled the expectations of the Executive Committee; the people have responded to their efforts with a zeal worthy of commendation. Another year will, without doubt, treble the number of members, and another Fair will be looked forward to with joyful anticipations. Soon we shall be able to take part in the State Fairs, when Sheboygan county will be brought into competition with the older counties of the State, and, without doubt, with honor. It is to be hoped that at the Annual Meeting of the Society, in March next, each member will make it a point to be present, to take part in the election of a new board of officers, and be prepared to renew their subscriptions. Much inconvenience has been felt by the Executive Committee in not knowing what to depend upon. They published a list of premiums, with but $10 in the treasury, trusting to the interest that might be awakened among the people. They have responded, and the Committee have been enabled to pay seventy-five per cent of the published premiums.

The whole amount of cash received was eighty-five dollars, the amount of premiums paid was sixty-seven dollars and sixty-five cents, and the amount of expenses incurred for printing, stationery, &c., was sixteen dollars and thirteen cents; leaving a balance in the treasury of one dollar and twenty-two cents. The whole number of members is ninety-four.

The Committee on Soils have not yet reported.

H. S. ANABLE, Secretary.

WALWORTH.

Elkhorn, December 31st, 1851.

Dear Sir—Your communication inquiring as to the origin, progress, and present condition of the Walworth County Agricultural Society is received; and below I give you a rough and hasty statement of the same, from such materials as I have in my possession.

The inhabitants of East Troy, under the lead of Messrs. S. Brooks, J. Burgit, E. Thayer, and others, in the spring of the year 1850, resolved to associate themselves together, under the name of "The East Troy Agricultural Society," to promote agriculture, horticulture, household manufactures, and mechanical work. To carry out the objects above expressed, many citizens of the towns adjoining East Troy assisted, by subscribing their names to the constitution, paying their initiation fee, and lending their influence to create a spirit of ambition among the farmers in their several neighborhoods, to come together in the fall,

at East Troy, and exhibit such articles of stock, farming implements, dairy products, &c., as each might have, by way of competition for premiums.

The officers of the Society at this time were: President, Augustus Smith, Troy; Vice President, Jacob Burgit, East Troy; Secretaries, Seymour Brooks and C. L. Oatman, East Troy; Treasurer, T. Mower, jr., Troy; Managers, Wm. Child, Hiram Brewster, Emery Thayer, Elias Hibbard, Joseph Bishop, William Watt, Samuel P. Cole, James W. Bartolf, and James Mother.

The first Cattle Show and Fair of the said Society was held at East Troy village on the 16th day of October, 1850, and was well attended, not only by those living in East Troy and the adjacent towns, but also by residents of almost every town in the county. There was a good exhibition of stock, both native and blooded, and premiums were awarded in all the departments of the Society. The day being unpleasant, the ploughing match was postponed to a future day of the same month, at which time several competitors entered their names, and gained for themselves great praise by their skill in ploughing.

The Society then met for the election of officers, and several gentlemen being present from different parts of the county, who were desirous of having the "East Troy Society" (heretofore, in a great measure, local in its character and influence) change its name to the Walworth County Agricultural Society, and those who had put the ball in motion, in East Troy, being desirous to embrace the whole county, and increase the benefits growing out of an Agricultural Association, a vote, after much discussion, was had and carried, that the Society, heretofore known as the East Troy Agricultural Society, should take the name of the "Walworth County Agricultural Society."

The officers elected for the year 1851, were: President, William Child, Spring Prairie; Vice President, Robert R. Potter, La Fayette; Secretaries, Edw. Elderkin, Elkhorn, and Seymour Brooks, East Troy; Treasurer, Sherman M. Rockwood, Lafayette; Managers, Jacob Burgit, E. Thayer, and William Hollinshead.

The Executive Committee of the Walworth County Agricultural Society determined to hold the first Cattle Show and Fair of the said Society, at the village of Elkhorn, on the 14th and 15th days of October, 1851.

The exhibition of horses, neat stock, sheep, hogs, dairy products, and household manufactures, at this Fair, surpassed the expectations of the most sanguine in the success of the enterprize. The concourse of people was very large; but many came with faint hopes and doubting hearts, and did not participate in the proceedings. When all was over, in all probability, their hopes received new strength, and their hearts were established in the belief that the movement in the county of Walworth to promote Agriculture, &c. was by no means premature, as had been the common saying through the county up to that time.

The receipts of the Society, and on hand, up to the first day of the last Fair, I am obliged to estimate, no report of the same being in my possession, at.	$25 00
Receipts by initiation fees in 1851, about	130 00
	$155 00

The expenses of the Society for the same time have been—on account of printing, &c.	$10 00
Contingent expenses, such as postage, &c.	6 00
Amount of premiums awarded in 1851	139 00
	$155 00

The officers elect, for the current year, are as follows: President, David Williams, Geneva; Vice President, Augustus Smith, Troy; Secretaries, Edward Elderkin & Seymour Brooks; Treasurer, Edwin Hodges; Managers, H. J. Starin, Whitewater; M. R. Brittain, Spring Prairie, and William Hollinshead, Delavan.

The prospects of the Society for the present year are flattering, if we may be allowed to judge of the same from hearsay evidence. It is certain, that the Society has accomplished much more during the past year, than any of its members claimed, or believed it would or could do; and the public sentiment of the county being now established in its favor, I know no reason why the Walworth County Agricultural Society may not look forward to the time, and that not far distant, when a great portion of the inhabitants of the county shall be enrolled among its members, and the influence of its organization shall be seen and felt in every school district within the county limits.

No small degree of the credit for this organization is due to Messrs. Brooks, Thayer, and Burgit, of East Troy, whose efforts in behalf of their town organization have had the effect of awakening an interest in the cause of agriculture throughout the length and breadth of Walworth county, proverbially called the "model county of the State."

Permit me to add, in conclusion, that the State Fair may be held sufficiently late in 1852, to succeed the various County Fairs in the State, so that the interest got up at the County Fair may be developed at the State Fair, by a full representation; and if the time and place of the State Fair is fixed upon at an early date, it will enable County Societies to make their arrangements accordingly.

I am, dear Sir,

Your very obedient servant,

EDWARD ELDERKIN,

Sec. Walworth Co. Agr. Society.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

WAUKESHA.

In this county a meeting was held at the Court House in the village of Waukesha, October 11th, 1851, for the purpose of forming a County Agricultural Society for the county of Waukesha, at which Aaron Putnam, of Vernon, was called to the chair, and Henry D. Barron, of Waukesha, appointed Secretary.

A. W. Randall, Esq., from a Committee appointed on that subject, reported a Constitution which was adopted, and the following officers were elected:

President, T. C. Dousman, of Ottawa; Vice Presidents, Aaron Putnam, of Vernon, and George McWhorter, of New Berlin; Recording Secretary, G. C. Cone, of Waukesha; Corresponding Secretary, A. W. Randall, of Waukesha; Treasurer, H. N. Davis, of Waukesha; Executive Committee, Martin Field, of Mukwonago, John Hodgson, of Pewaukee, G. C. Pratt, of Waukesha, E. W. Edgerton, of Summit, and C. H. Purple, of Brookfield.

On motion of A. W. Randall, it was Resolved, that the Executive Committee correspond with the Agricultural Society of Milwaukee county on the subject of an union of the two Societies, and report at a special meeting to be called by the Executive Committee.

This union was subsequently brought about, and the Society is now known as the "Milwaukee and Waukesha County Agricultural Society."

WISCONSIN HORTICULTURAL SOCIETY.

MILWAUKEE AND WAUKESHA.

With a view to an organization for the purpose of advancing the interests of Horticulture in the above counties, and the State generally, a call was issued about the middle of October, 1851, for a meeting of Citizens, to be held at the rooms of the Merchants' Insurance Company, in the city of Milwaukee. The following account of the proceedings, under the call, has been furnished us by by the Secretary:

At a meeting of the Citizens of Milwaukee and Waukesha Counties, held in pursuance of a call, at the rooms of the Merchant's Insurance Company, on Tuesday afternoon, October 27th, 1851, L. H. Cotton, Esq., was chosen Chairman, and W. H. Watson, Secretary.

The object of the meeting was stated to be for the formation of an Horticultural Society.

On motion of Hans Crocker, Esq., a Committee of the following gentlemen was appointed to draft a Constitution and By-Laws for the proposed Society:—Cyrus Hawley, S. P. Beecher, Charles Gifford, L. W. Weeks, and G. O. Tiffany.

The Committee then retired for a short time, and returned, reporting the following Constitution:

"This Association shall be called the Wisconsin Horticultural Society, and shall be composed of such persons as shall subscribe to the rules and regulations of the Society, and pay an entrance fee of one dollar, and annually thereafter the sum of fifty cents, to be paid at such time as may be designated.

"Its objects shall be to encourage the growth and culture of Fruit and Ornamental trees, Flowers and Vegetables, and to disseminate useful knowledge in reference thereto.

"Its officers shall be a President, Secretary, and Treasurer, and an Executive Committee of seven, who shall be chosen at the first meeting, and hold their offices for one year.

"The several officers shall perform such duties as are incident to such offices in similar Societies.

"The Executive Committee shall have the general control of the affairs and funds of the Society, and subject to such regulations as the members may adopt. They shall designate the times and places for holding exhibitions and fairs, and prescribe the rules and regulations therefor. They shall purchase such standard works and periodicals upon Horticulture, Fruit, Trees, &c., as they may deem proper, and procure from the different Nurseries, catalogues of Fruits, Flowers, Trees and Shrubs, and shall, from time to time, cause to be published such extracts therefrom as they may deem useful. They shall give due notice of the time and place of holding the annual meetings of the Society, and at such meeting shall make a report of all their acts."

On motion of S. M. Booth, the report of the Committee was accepted, and the Constitution adopted.

On motion of C. Gifford, the following Committee was appointed to nominate officers for the Society: Charles Gifford, Amos Sawyer, Rufus King, S. M. Booth, Geo. O. Tiffany.

The Committee reported the following names:

For President, Benjamin McVicker; for Secretary, W. H. Watson; for Treasurer, Hans Crocker; and recommended that the appointment of the Executive Committee be deferred to a future meeting.

On motion of I. A. Lapham, the report of the Committee was accepted, and unanimously adopted. The Society then adjourned to meet at the call of the officers.

It is expected, that early action will be taken to carry out the objects of the Association.

AGRICULTURAL CONDITION AND CAPACITY.

The following papers are designed to give some general ideas of the capacity and present agricultural condition of the several counties of the State. As but a short time has elapsed since the virgin soil of our State was first broken by the plough, and as organized efforts for the improvement of its Agricultural condition are of very recent date among us, the papers, of necessity, partake somewhat of an historical character rather than of records of the experience and skill of those engaged in the cultivation of the arts of husbandry.

While they are not presented as perfect agricultural surveys, yet they will be found of interest, and valuable as exhibiting the leading and general peculiarities of the counties, and as preparing the way for the more thorough extended and scientific survey, which it is the intention of the Society to institute hereafter.

GEOLOGICAL FORMATION OF WISCONSIN.

Milwaukee, December 31st, 1851.

Dear Sir—I have received your favor of 1st instant, asking for a general statement of the geological formations and constituent elements of the earths of the various sections of the State, their agricultural properties and capacities, and adaptation to tillage or stock grazing, &c.; and regret that want of time will prevent me from making as full a statement of the geological formations of the State as could be wished, or as you will probably expect.

If, however, the following very general summary, shall be deemed of sufficient importance, it may be inserted in the proposed volume of "Transactions."

We may divide the State into three geological districts, and denominate them the Primary—the Sandstone—and the Limestone districts.

It is understood that nearly all of the northern part of this State abounds in primary rocks, and other rocks of igneous origin, as trap dykes, &c. This kind of country extends from near Lake Superior to the lower or principal rapids of the several streams running south—the St. Croix, Red Cedar, Chippewa, Black, Wisconsin, Oconto, and Menomonee. It is not to be understood, however, that this district is exclusively occupied by primary rocks, for it is often interspersed

with smaller tracts of sandstone, and perhaps in a few cases with limestone. The great "pine region" of Wisconsin lies mostly in this part of the State; and although there are some tracts covered with hard wood, it may in general be characterized as a country of pine ridges and cranberry marshes. It is but little settled, or occupied, except for the purposes of the lumber trade. Whether it possesses any material value as an agricultural district remains to be ascertained by future explorations. In this division of the State we find the most elevated land, constituting the southern margin of the great basin of Lake Superior. About the sources of the Montreal river this "divide" has an elevation of about eleven hundred and fifty feet above the level of Lake Michigan; and towards the west it gradually descends, until at the western boundary of the State it is only about five hundred feet above the same level. This whole region may be considered an elevated plateau. It is remarkable for the very great number of small lakes, varying from a few rods to several miles in diameter, scattered profusely over the whole surface. These lakes constitute the "head springs" of the numerous streams that run northward into Lake Superior, or in an opposite direction to the Mississippi. So much water in shallow basins, subject to rapid evaporation during the summer, must have a very decided effect upon the climate, rendering it more suitable for the purposes of the farmer, than it would be otherwise.

The Sandstone district occupies the country immediately south of the Primary, and varies in width from ten to sixty miles. Its general form is that of a crescent with its horns on the Menomonee and St. Croix, while its greatest breadth is in the region of the Wisconsin river, near the middle of the State. The Sandstone is the oldest of the fossil-bearing rocks, called Pottsdam Sandstone,* and shows itself in high cliffs and isolated rocks. In places where the sand, resulting from the disintegration of this rock, constitutes its chief element, the soil is not very inviting to the farmer and settler. It is warm, mellow, easily worked, and is doubtless well adapted to the culture of some kinds of crops. It is highly probable, however, that it will be found wanting in durability. It will here be more necessary for farmers to adopt the system best suited to the soil; and by a judicious rotation of crops, and application of manures, to keep up its fertility. If a Buel could restore a sandy waste to a fertile and highly productive farm, surely it cannot be difficult to maintain the sandy soils of Wisconsin in their present state of productiveness. But as we approach the southern margin of the sandstone district we find in the cliffs, alternating layers of soft limestone, which by its decay simultaneously with the sandstone, produces a soil of the very best

* The identity of this rock with the Pottsdam sandstone of New York is proved beyond a doubt, by the discovery of a characteristic fossil (Scolithus linearis, of Hall, Pal. of N. Y. vol. 1, p. 2,) one mile north of Lyons, in Sauk county.

kind. Indeed, much that at first sight is supposed to be silicious sand, by applying the magnifyer, is found to be made up in a considerable degree of particles of limestone; and we cease to wonder at its productiveness. Instances are known where banks of this kind of sand have produced better crops than the ordinary soil adjacent. Much of this sandstone is so pure that it might be used in the manufacture of glass. It consists of particles of quartz, or pure silex, adhering without any apparent cement.

But there is another portion of the State where the sandstone, supposed to be quite distinct from that above described, is red; and, according to Dr. Norwood, contains 3.9 per cent of alumnia and iron, and one per cent of carbonate of lime. It effervesces when acids are applied to it. This sandstone lies along the south shore of Lake Superior, extending from the mouth of the Montreal river to beyond the western limits of the State. It has an average breadth of about twenty or twenty five miles.

The red marly clay found throughout the northern part of the State, and extending, in limited tracts, south of the Neenah, may be supposed to result from the destruction of this red sandstone, and perhaps of other rocks of a similar character.

This marl every where furnishes a good soil as might be inferred from its composition. Dr. Norwood* analyzed a specimen from the Bois Brule river, and found its constituent elements to be as follows: Water, 8.0—Silica, 41.1—Clay, 31.1—Carbonate of lime, 4.1—Carbonate of magnesia, 4.7—Alumina and oxide of iron, 9.0—Loss, 2.0.

The third division of the State, embracing all the southern and south-eastern portions, and extending up the immediate valley of the Mississippi, is based upon calcareous rocks. They consist of yellow, blue, and grey varieties of limestone, and are classed by geologists as "Silurian rocks," being of an age long anterior to the rocks of the coal formation. Although to the casual observer they appear to lie in horizontal beds, it will be found upon closer examination that they have a gentle dip or inclination. Those lying east of Rock river dip eastwardly towards Lake Michigan, while those on the west dip towards the Mississippi. In northern Illinois the same rocks dip towards the south and pass under the great "coal basin" of that State.

The limestones in the western part of the State are composed of from forty-seven to fifty-two per cent of carbonate of lime, combined with from thirty-eight to forty-seven per cent of carbonate of magnesia. The other ingredients are, principally, about six per cent of silex and two of oxide of iron. The limestones of the eastern portion of the State have not been chemically examined, but they

* See Owen's Report, 1848, page 57.

are believed to be more nearly a pure carbonate of lime; at least they do not contain so large a proportion of carbonate of magnesia.

The rocks that form the solid basis of the State are usually covered with loose materials, consisting of clay, sand, gravel, and boulders, constituting what is known among geologists as the "northern drift." These materials, of course, greatly modify the nature of the soil. You may find, at any place, fragments of various kinds of rock mingled together, and forming, by their decay, a very different soil from that produced by the solid rock below. Thus nature has equalized her gifts and bestowed a rich soil upon districts where we would otherwise only look for sterility and barrenness.

In many localities the clay, sand, and gravel, are arranged in regular order of superposition, and in strata, like those of the more solid rocks. At Fond du Lac these layers are so arranged as to give origin to the ever-flowing fountains so readily and fortunately obtained by penetrating the impervious clay. These regular deposites appear to be a distinct formation, subsequent to the drift properly so called, and in some cases cover deposites of marl with recent shells, peat, and even sticks of wood, &c. There are places where this clay, sand, or gravel, impart their peculiar character to the soil; there being a predominance of some one of these ingredients. In each of these cases a different system of agriculture should be adopted, suited to the nature of the soil; or efforts should be made to render the soil uniform by supplying the deficient materials. When the soil consists mostly of clay, it assumes upon exposure to the sun and the weather, a whitish color, and is but poorly adapted to the culture of winter wheat, though the various spring crops flourish well.

If your Society could discover and make known some cheap and simple remedy for this defect in in a portion of our soils, so as to enable the farmers to raise winter instead of spring wheat, it would add vastly to the annual production of the State, as a little calculation will show. If we suppose there are one hundred thousand acres of this land yielding twenty bushels per acre, or two millions of bushels, and multiply this by fifteen cents, as about the average difference in the market value of spring and winter wheat, we shall find that Wisconsin sustains an annual loss of three hundred thousand dollars for want of such a remedy. This is a matter deemed to be worthy of attention and investigation; and it should stimulate every good citizen to aid and encourage this Society in its efforts to benefit the farming interests of the State. There are, doubtless, numerous other cases, where a little investigation by competent persons, and the publication of the results, would prove equally beneficial.

A portion of the limestone district of Wisconsin, lying west of Sugar River, and south of the great dividing ridge running parallel with, and a few miles south of the Wisconsin River, is known as "the mineral region," and is destitute

of drift materials. It possesses the two advantages but seldom united, namely, of being a rich mining, and, at the same time, a highly productive farming district.* While the miners bring up from fifty to seventy millions of pounds of lead annually, from beneath the surface, the soil is made to yield its accustomed bounties.

It will be seen that in many important particulars, Wisconsin bears a close analogy to the State of New York. We have a similar primary, elevated region at the north; and south of us is the coal basin of Illinois, corresponding to that of Pennsylvania. We have the same Silurian rocks, extending from the Potts-dam sandstone to the Corniferous limestone, inclusive; and we have also running nearly through the State, a very remarkable prolongation of the same "Mountain Ridge" that in Western New York causes the great cataracts of Niagara, the Gennesee, &c.; and it is composed of rocks of the same geological age. Those, therefore, who have studied the very valuable reports of the geologists and agriculturists of that great State, will readily understand the geological and agricultural interests of Wisconsin.

There are numerous natural meadows scattered over a large portion of the State, covered annually with a rich growth of a coarse kind of grass (species of the genus CAREX,) which constitute a very valuable resource in the early settlement of the country. These meadows furnish the "feed" for cattle, &c., until farms can be opened properly; and they have been one of the essential causes of the rapid growth of our State in population and wealth. Without their aid the farming interests of the State would have been far behind what they are at the present time. These meadows can, with proper management, be easily covered with the more nutritious and valuable "tame grasses," and thus add still more to our means of wealth.

Many of these natural meadows, and many of the tamarack swamps are underlaid by extensive beads of peat, resting upon equally extensive beds of shell marl. These beds constitute a great bank, not liable to be broken or to suspend payment, from which to draw future supplies of the food of plants, whenever our present soils shall exhibit signs of exhaustion, in consequence of over-cropping, or injudicious management on the part of the farmer.

There is a species of wild grass† growing very abundantly in the woods in some portions of the State (whose long, coarse leaves retain their life and nutritious qualities during the winter,) that has rendered essential service in hastening our rapid progress, by reducing the labor and expense necessary in wintering stock in a newly settled country. It prefers high and dry soils, but will not flourish except in the shade of forest trees.

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* For the analysis of soils in this district, see Table I.

† The mountain rice—Oryzopsis asperifolia, of Michaux.

The following Tables show that our soils will bear a favorable comparison with those of other States. They are from Dr. Owen's reports to the General Government, and are all the analyses of Wisconsin soils within my reach. It is much to be regretted that so few of our soils have been examined, and that they are not more generally distributed over the State.

TABLE I.

ANALYSIS OF SOILS FROM THE "MINERAL REGION" OF WISCONSIN. From Dr. D. D. Owen's Report, 1839, page 49.

Localities.	Water.	Organic Matter.	Salts, soluble in Water.	Salts, soluble in Dilute Muriatic Acid.	Silicious Matter.	Specific Gravity.
Prairie Valley Soil, E. hf. T. 5, R. 6, E. Dane Co.	6.5	12.0	3.0	1.0	75.0	1.30
Section 8, T. 6, R. 8, E.....do....	1.5	1.0	1.5	0.5	95.0	2.82
Township 2 (?) R. 6, E.....Green Co.	3.0	11.5	3.0	0.5	82.0	1.68
Section 34, T. 4, R. 4, E.....Lafayette Co.	0.6	3.3	0.9	0.8	93.0	2.32
N. E. qr. of Sec. 7, T. 2, R. 1, E....do.....	2.5	10.0	2.0	0.7	84.0	1.80
Township 1, R. 1, E. .....do.....	3.5	10.5	2.0	1.0	83.0	1.64
Rich Valley soil, Sec. 33, T. 4, R. 2. W. Grant Co.	7.5	26.0	4.5	1.5	60.0	1.24
N. W. qr. of Sec. 15, T. 5, R. 1, W....do....	4.5	11.5	2.0	1.0	80.0	1.44
N. E. qr. of Sec. 8, T. 6, R. 3, W.....do....	4.0	9.2	1.8	1.5	83.0	1.92
Section 22, T. 7, R. 4, W.....do....	3.5	13.5	2.0	1.0	79.0	1.66
Mean of 10 Soils.....	3.7	10.9	2.3	0.9	81.4	1.78

TABLE II.

ANALYSIS OF SOILS FROM THE NORTHERN (UNSETTLED) PORTION OF WISCONSIN. From Dr. Owen's Report 1848.

Localities.	Water.	Organic Matter.	Mineral Salts, &c.	Silicious Matter.	Oxide of Iron.	Alumina.
Sandy Soil 9 miles above mouth of Chippewa	1.02	2.00	1.11	93.00	1.65	1.22
From the Eau Galli.....	2.50	8.20	5.25	77.10	2.68	4.04
Falls of St. Croix, near a trap range.....	2.25	7.25	4.57	81.49	1.50	2.97
From New Wood River.....	2.35	6.67	3.29	84.45	1.67	1.57
Madaline Island, Lake Superior.....	4.32	8.98	0.98	75.20	4.55	5.97
Mean of 5 Soils.....	2.49	6.62	3.04	82.25	2.41	3.15

The average quantity of organic matter, which in general may be deemed a measure of the value of a soil, in these fifteen specimens is 9.44 per cent.

In twenty-four specimens of the soil of Western New York, analysed by Professor E. Emmons,* the mean quantity of organic matter is reported as 6.64 per cent—those of Wisconsin being nearly one-half more.

In one hundred specimens of the soil of Massachusetts, analysed by Professor Hitchcock,† the average quantity of this matter is stated to be 7.60 per cent.—those of our State being one-fourth more.

It will be seen, then, that there is of organic matter, the proper food of plants, in the soils—

Of Wisconsin..... 9.44 per cent.
Of Massachusetts..... 7.60 per cent.
Of Western New York. 6.64 per cent.

It is quite probable that the examination of a greater number of soils from this State would yield similar results. Would it not be well for the State Agricultural Society to apply a portion of its means in obtaining the analysis of specimens from every county in the State?

Very respectfully,

I. A. LAPHAM.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

AGRICULTURE OF BROWN COUNTY.

Brown County, as now organized, contains what is equivalent to about fourteen and a half townships of land, besides the area of two and a half townships, covered by the waters forming the head of Green Bay. Fox River enters the county in town 21, range 19, and running a north-easterly direction about twenty-three miles, discharges its waters into Green Bay, in town 34, range 21, so that the river and bay divide the county into two parts of nearly equal extent. As this river is not subject to much variation between high and low stages of water, there is very little of what may be called "first bottom land."

The face of the country is generally level, or gently undulating, with no swamps or waste land of consequence, except in the marshes bordering upon the Bay. A

* Report on the Agriculture of the State of New York, vol. 1, pp. 274-296.
† Report on the Economical Geology of Massachusetts. 1838.

limestone ridge runs through the county from S. W. to N. E., at a distance of from five to seven miles east of Fox River. This serves as a dividing ridge between the waters running into Green Bay and Lake Michigan. In its geological character, this ridge is of primary formation, compact, amorphous, of a bluish-gray color, and without organic remains. There is, however, in several localities in the county, limestone of organic formation, of early and more recent date, affording some very fine specimens.

Timber and Soil.—On the high banks near the river, the timber is light and dwarfish, and in many places the soil is thin; but further back on either side, the timber becomes heavy, and the soil deep and strong, producing all the varieties of hard wood to be found in this latitude, interspersed with pine, and in some towns a good proportion of hemlock. The county generally is heavily timbered with sugar maple, beech, oak, elm, birch, and bass-wood. The sub-soil is mostly of a heavy or clayey loam, containing more or less limestone pebbles. Pine ridges are of frequent occurrence, particularly through the eastern, centre, northern, and north-western parts of the county. The soil here is generally sandy and light, but will produce grain well with a thorough course of tillage.

Crops.—Brown county is well adapted to the growth of wheat, rye, oats, barley, buckwheat, Indian corn, &c., but grass is the most natural to the soil, hence it is much better adapted to stock-raising and grazing, than it is to producing grain, or to such branches of husbandry as involve a constant tillage of the soil. Oats and rye produce well with little care, and wheat amply repays the laborer when he does justice in preparing the ground and putting in the seed. By a judicious system of tillage, wheat may be made a leading crop, and will be reliable. The greatest trouble with it now is, liability to rust and winter-kill. The last will be obviated by cultivating the ground better and sowing earlier; the first will be benefitted by the same means, and further improved by observing the effects of different kinds of manure upon the crop. The hardier varieties of Indian corn are cultivated with success, but owing to the coldness of occasional seasons, it is not altogether reliable as a leading crop upon the high lands, although Judge Arndt has successfully cultivated corn in the same field for twenty-three years in succession. This was near the river, in the town of Green Bay. The potatoe disease has affected this crop considerably for the last few years, particularly when grown upon low, moist ground, or a clayey soil; but in dry, sandy or gravelly soils, they have generally escaped the rot, and proved a good crop. Other roots produce bountifully.

Mode of Cultivation.—With few exceptions, a systematic course of agriculture has not been pursued in Brown County, until within the last two or three years; and, even now, the best specimens of cultivated farms are very imperfect efforts. Hence little can be said with reference to pattern farming. Captain J.

W. Cotton, until recently of the U. S. army, a few years ago resigned his commission and sword and the excitement of the camp, to pursue in quiet a life devoted to agriculture. His farm (Beauprey Place,) is situated on the high land one and a-half miles from Green Bay, upon the east side of the river, and until Capt. Cotton undertook its culture, was truly an unpromising tract. In 1850, the first year of his efforts, with one coat of manure upon land that had been "worn out," of a sandy soil, and a clayey-marl sub-soil, with deep ploughing, and thoroughly pulverizing the surface, he raised from thirty-five to forty bushels of winter wheat to the acre, and remunerating crops of corn and oats. Upon one-fifth of an acre, with field culture, he raised 335 bushels of carrots, the largest of which, when trimmed, weighed six pounds each. The past summer, from a field of four and a half acres, that had been "run to death" by the French mode of tillage, by the plan of culture he had pursued the year previous, he raised and harvested 340 bushels of ears of corn, and about 1800 pumpkins. These results, compared with the make-shift culture that has prevailed with most of those who have pretended to cultivate the soil, serve to prove that Brown County may, when her forests have been removed, and the land brought under the genial influence of the sun, raise at least her own substantials of life, and not depend for her supply upon the fruit of the husbandman's labor elsewhere. Very many of the inhabitants who have lived here for years, and who have pretended to gather their scanty crops from their exhausted fields, seem to have had no idea of the value of manure, for they permitted it to accumulate as if accident had thrown it together, or, if it was in the way, they hauled it to the river, marsh, or slough-hole, and got rid of it the easiest way possible. But example upon this class of farmers has not been lost, there having been for the past two years an obvious and general improvement. The virgin soil is proverbially quick and strong, and new farms when opened have not seemed to require any artificial stimulus. This fact, connected with the hitherto unconquerable propensity of the Indian race to avoid systematic labor, and the imitative faculty of the French people, led their descendants to the adoption and pursuit of a course of farming very nearly resembling the rudest efforts of the aborigines. This unprofitable waste of time and labor is beginning to be realized, and as intelligence advances, will be among the things of the past.

Stock.—Very little attention has ever been paid to stock raising. Colonel Tuller brought a drove of cattle to Green Bay from Illinois, in 1836 or '37, which was the basis for most of the neat cattle that have been raised here. In 1839, the Hon. M. L. Martin obtained and brought here a full bred Durham short horn bull, which he kept five years; and although no pains have been taken in raising cattle, the benefits resulting from Mr. Martin's enterprise, are distinctly visible. Many of the cows from this stock are excellent milkers, and in

their form and symmetry show their origin. Mr. Martin, and also some others, have attempted to introduce improved breeds of swine, but with little permanent success; and a large proportion of the hogs raised are of inferior stock. There are no sheep in the county except those that have been brought here for the shambles. The horses raised are Indian and Canadian ponies, good specimens of the breed, a hardy race of animals, easily kept, and capable of enduring much fatigue. Three years ago, quite a number were purchased for the California emigration, and they are said to have endured the fatigues of the journey across the plains as well or better than any other animals.

Adaptation to Stock-raising as compared to Tillage.—Stock-raising and its concomitant pursuits, will unquestionably become a leading business with agriculturists in this county. Wherever the land has been cleared, and cattle have been permitted to range over it, English grasses, and particularly white clover, have kept an even pace with the improvement, and by their rich and nourishing juices, gladdened the heart of the husbandman, by imparting to his animals vigor and fatness. The vernal grass upon the Schuylkill, near Philadelphia, is world-renowned for its nutritious properties; but there is a similar semi-native grass here, that comes in almost unbidden as soon as the forest is removed, of nearly, or quite equal value, and well adapted to mowing or pasturage. But this grass is not exclusive, for white and red clover, and red top and timothy, have a peculiar tenacity to life when introduced into the soil.

The steady cold of our winters seems to be well adapted to secure the health of stock, much better than alternate snow and rain storms,—consequently, if properly fed, stock will be active and vigorous, and can be made as fine by breeding and feeding as any where else in the State.

Horticulture and Fruit growing.—The spring season is uniformly cold and backward, and garden vegetables grow very little until after the 20th of May. Peas, onions, and such hardy vegetables, may be planted before this time, but such as are liable to be injured by the frost, should not be planted until later. When the earth gets warm, there is probably no country where vegetable growth is more rapid. In the Fox River valley and along the shores of the bay, garden vegetables are obtained grown in the open air within two weeks of as early as when cultivated in the same manner upon the lake shore at Chicago. Melons grow luxuriantly, and ripen in August. Plums and cherries, of the hardier varieties, grow with little trouble. Peaches have never been successfully cultivated, but apples will be a certain crop, whenever the trees get large enough to bear. Most of the sub-soil, where the land is level, being impervious to water, fruit trees, in order to do well, should be planted upon rolling land, or land that is well drained, as the influence of much water around the roots at any season of the year is highly deleterious. There are now many young orchards, as well as

fruit gardens, well located; and there is no doubt but a few years will prove that "the grand-child hath planted, and his ancestor hath eaten of the fruit of his labor."

Markets.—Should the natural facilities for manufacturing which abound in this region be ever improved, the agriculturist will have a home market; but, as we are now situated, if there was a surplus raised, it could be shipped to an Eastern market, or to the lumbering and fishing regions north of us, or to the mining region on Lake Superior, with as much facility as it could from any of the lake towns. Or when the Fox and Wisconsin improvement shall be completed, Brown County will also participate in the advantages of a southern market. Green Bay seems to be the only natural channel for the winter trade of those who are engaged in business north of this county, so that the producer here, must be well situated for a market for any surplus he may have; and this market, if we include the mining region of Lake Superior, is already quite extensive and constantly improving; and Green Bay may as properly be considered the head of the market, as any port west of Buffalo.

Miscellaneous Remarks.—The husbandman and agriculturist, in this section of country, by adopting and pursuing a strict course of industry, frugality, and economy, will steadily but surely accumulate property. Very few of the resources of the country are yet developed. Lumbering and trade have chiefly occupied the attention of those citizens from the Eastern States who have heretofore settled here, and they could purchase and ship such supplies as they needed, cheaper than they could raise them, taking into consideration the expense of clearing the land. But now, farmers are beginning to settle here, and after a few years of privation, such as is incident to the settlement of every new country, their labor will almost imperceptibly become invested capital, from which they will realize an accumulated interest. In addition to the advantages that Brown County possesses for raising grain and grazing combined, the seasons and soil are peculiarly congenial to the growth of flax. And should the alleged discovery for separating the lint from the woody stalk, prove as well adapted to the object as it is represented to be, the raising of flax will become an important business. Under favorable circumstances the growth of flax is very rapid, and if sown here about the first of June, the seed will ripen so that it can be harvested in August.

In most instances, the farmer here cultivates his own fields, his condition in life being such that he cannot command means to employ much help, consequently the improvements will progress slowly, but "patience and perseverence will remove mountains."

Yours respectfully,

To Albert C. Ingham, Esq. L. B. BRAINARD.

Sec. of the Wis. State Agr. Society.

AGRICULTURE OF COLUMBIA COUNTY.

Randolph, December 25th, 1851.

Dear Sir—Your communication of December 1st, 1851, asking a general account of the agricultural condition of Columbia county, its manner of cultivation and crops, its facilities for market, &c., together with my opinion as regards its adaptation to tillage compared with grazing, came to hand by due course of mail.

In reply, I have to say, that the greater part of our citizens came here poor, consequently could raise wheat easier than any thing else, that staple requiring a less outlay in cash than stock of any kind, and some farmers seemed to be doing very well so long as they could get from eighty to one hundred cents per bushel at Milwaukee; but for the last two or three years the crop has been short, and this year the price very low, a great many have anticipated good crops and have purchased teams, tools, and made improvements on time, expecting to meet their engagements with their crops: but instead of being able to do so, have been obliged to loan money at a high rate of interest, and now find themselves in straightened circumstances—how to get right again seems to be a subject for general conversation.

Some are of opinion that it will not pay to grow wheat; others, that it will not pay to grow stock in this high latitude, requiring so large an amount of feed for winter.

I am fully satisfied that neither branch would be practicable alone, but by connecting the two branches, both can be made to pay well.

Suppose a farmer cultivates eighty acres in wheat, oats and barley, and twenty acres of corn, the straw, chaff, and corn stalks, will very nearly winter thirty head of cattle; whereas if he kept no stock, the coarse food from his farm would be very nearly, if not quite lost to him, and he would receive no profit except from the grain. On the other hand he would get the growth of his cattle.

A good yearling calf is worth five dollars; at two, it is worth ten; and at three, fifteen dollars—one hundred per cent on the first cost.

Twelve or fifteen cows on a farm, properly managed, will yield a profit of fifteen dollars per head, besides raising the calf, and using milk, butter, and cheese, for a small family; the surplus milk makes fine pigs.

The farmer, while cultivating his hundred acres, can take care of his thirty head of cattle at the same time, with very little extra expense; the milking can be done in the morning, while breakfast is being prepared; and so in evening; it will require from thirty to sixty minutes.

I have kept from five to twelve cows per annum for the last ten years—have

kept an account of the product—and after deducting what was used in the family, they have averaged sixteen dollars per head; we make butter and cheese.

There is a large profit in raising horses. I bought a yearling mare colt, for twenty five dollars, ten years ago last spring. I sold her at six years old for sixty dollars; have since sold two colts, at two years old, for ninety-five dollars, and have eight on hand of her stock, valued at a low estimate at 470 dollars.

There is also a fair profit in keeping sheep. A friend of mine, in Walworth county, told me last Winter that he sheared one hundred and thirty sheep the season before; got one hundred and thirty dollars for the wool at his door, and raised seventy lambs—the lambs would more than pay the expenses.

There is also a profit on hogs, properly managed. There is no profit in keeping a poor breed of hogs, nor in half-feeding a good breed; no more hogs should be kept, than can be kept well—they should be fatted early while the weather is warm; in order to do so, our farmers should have old corn to commence feeding in August, and raise barley, which by the way is a very good substitute for corn; it should be ground and soured while the weather is warm. Pumpkins, potatoes, and other roots, boiled and fed with barley, are very good.

It appears therefore to be bad economy for the farmer to devote his whole time and attention to raising wheat and other grains, or to raise stock exclusively; but when he can blend the two branches together he will reap golden harvests.

Our market heretofore has been at Milwaukee. Grain this year, however, will not bear transportation. Our best market at present is the Pinery; we are anticipating one at Fort Winnebago and other ports on Fox River, when the northern improvement is completed—the extreme south eastern corner of the county is about thirty miles from Fort Winnebago.

About one-half of our county is rather sandy for grasses, though well adapted to grain; the balance seems to be well adapted to both. I have seen several pieces of timothy and clover that appeared fine on the prairie. There is a great deal of land in the older settled parts of the county that should be seeded down now, in order to rest the land and make a good fallow for wheat.

We formed a County Agricultural Society some time in November last, and elected Hon. Jesse Van Ness, of Westpoint, P. O. Lodi, President; and Hon. John A. Byrne, of Otsego, Secretary.

The science of Agriculture is steadily progressing, and the day is not far distant when it will not be thought disreputable to till the soil.

In conclusion, permit me to say, you have my best wishes for the success of the Wisconsin State Agricultural Society.

Very respectfully, your obedient servant,

JOSEPH KERR.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

AGRICULTURE OF CRAWFORD COUNTY.

PRAIRIE DU CHIEN, December 26th, 1851.

DEAR SIR—In answer to the request made in your letter, I proceed to give a brief account of Crawford county:—First, as to its size, boundaries, number of square miles, and extent of land susceptible of cultivation.

As the present limits of this county are quite small when compared with its original boundaries; and as you extend your inquiries to "the north-western portion of the State," which was originally included in Crawford county; and as it is doubtful whether you will receive the desired information from some of the counties which have been taken from *old* Crawford; I trust a more general range in this communication will be acceptable, rather than one confined to our present narrow limits.

Crawford county, as constituted and organized, I think it was in October 1818, by proclamation of Governor Cass, of Michigan Territory, to which it then belonged, included all that portion of what is now Wisconsin and Minnesota, which lies west of a line drawn north and south through the Portage, between the Wisconsin and the Fox rivers, now the site of the town of Fort Winnebago, or Portage city, extending north to Lake Superior and the northern boundary of the United States, and west to the Mississippi river.

Within this boundary is included what is called "the Carver Grant," which, having excited some attention, and acquired some thousands of owners, within fifty years past, it may not be improper here to notice: The pretended grant was "from the Falls of St. Anthony, running along the east bank of the Mississippi nearly south east, as far as the mouth of Lake Pepin, where the Chippewa river joins the Mississippi, and from thence eastward five days travel, accounting twenty English miles per day, and from thence north six days travel, at twenty English miles per day, and from thence back again to the Falls of St. Anthony, on a direct straight line." Within these boundaries would be at least six millions of acres, or about ten thousand square miles.

This grant is said to have been made to Captain Carver, on the first day of May, 1767, for and in consideration of his services to the Nau-do-wissies—the Dakota, or Sioux, by Haw-no-paw-ja-tin, the Turtle, and O-toh-ton-goom-lish-eau, the Snake, two chiefs of that tribe or nation. This deed was in Captain Carver's own hand writing, as appears from Dr. Peter's testimony before a committee of Congress, in 1805, and without witnesses, because no one was present who could write his name. In 1769, Captain Carver went to England, and presented the matter to the King, probably in 1770, and prayed a confirmation of the grant; which, as Dr. Peters says, was promised, but the matter was delayed until the

news of the battle of Bunker Hill reached England, when the whole matter was suspended until the American troubles should subside; and before this, that is in 1780, Captain Carver died, and the grant was never confirmed by the British Crown.

In 1806, Dr. Samuel Peters, who it seems by marriage became an heir to this claim, presented the matter to Congress, and prayed for its confirmation; but it was rejected. In 1821, February 17, a confirmation of "the Carver Grant" was made at Lac Traverse on the St. Peter's river, by Chateau Houmans, Little Crow, and three other Chiefs. On the 13th day of August, 1824, it seems that Eesh-tah-hum-bak, or Sleepy Eyes, who claimed to be a Sioux Chief, was in the city of New York, and confirmed the said grant. And at the ensuing session of Congress another petition was presented for a confirmation of this grant by that body, which was again refused; and among other reasons assigned for its rejection was the fact, that no such Indians as the first signers of the grant were known, and no tradition of the grant was to be found among the Sioux.

In 1821 a keel boat load of goods was sent up to the Sioux, and the deed of that date was obtained by this means. But as soon as the United States Indian agent and the officers of the United States army at Fort Snelling, St. Peters, were informed that the keel boat men were dickering with the Indians about the land in question, the boat and men were ordered out of the country, which they left in double quick time. This I learned from the traders, on my first visit to the country in 1837.

In 1837 the Indian title to the pretended grant was extinguished by treaties with both the Chippewas and Sioux; and on the 7th day of December of that year the claimants, under Carver's heirs, made another attempt to secure the confirmation of the grant. And the deposition of Kenneth McKenzie, who witnessed the deed of confirmation in 1821, as to the fact of the said grant; and also the deposition of Ramsey Crooks, as to the identity of said McKenzie, were taken in New York city, and I think were presented to Congress, or an attempt made to do so; but it seems this application succeeded no better than the former ones.

The claimants of this pretended grant may be called *legion*, for they are many. The first deed of this claim is without date, in history, but must have been given within the past century. It is said that Martha, a daughter of captain Carver, and the only one of his children then in England, and under their laws deemed the only heir, was induced to marry, and then with her husband (whose name is not given) gave a deed therefor, to the mercantile house of Conly & Co. in London, who soon after sent one Clarke, with a stock of goods to obtain and keep possession of the grant; but he being robbed and murdered on the Niagara, the expedition failed, by which Conly & Co. lost £3,000 sterling.

On the 9th of May, 1794, Jonathan and Rufus Carver, together with four of

their sisters, (not including Martha,) heirs of Captain Carver, all living in Vermont and Massachusetts, quit claimed the said grant unto Edward Houghton, of Vermont, for and in consideration of the sum of £50,000, Vermont currency, or $166,666 66.

On the 20th of February, 1822, the said Edward Houghton and wife, for and in consideration of the sum of five dollars to them in hand paid, (a great falling off in price,) aliened, remised, and released, the said grant unto James L. Bell and Charles Graham, of the city of New York, and George Blake, of Boston, in trust for "The Mississippi Land Company of New York." But how many deeds have been given to others, and how many claimants may now be found, it is probably impossible to tell.

The grant was at one time surveyed, on paper, and laid off into townships, and one or two village plats, and lots in town and country, sold by their numbers, to an extent which would probably cover double the number of acres in the grant. After the Indian title was extinguished in 1837, several companies of surveyors went upon the pretended grant to survey and plat the land, or to look up the lines previously laid, or pretended to have been run, marked and staked off, but were required to leave by the U. S. authorities; the claim being of no value, not having been recognized by either the British or American governments.

A number of deeds are on record in Crawford County, Wisconsin, and a number more have been sent to the county to be recorded, which not being accompanied with the necessary fee therefor, were not honored with a record. One of the latter class is in my possession, which recites the sale of a million and a half of acres.*

To return from this digression. About the year 1830, all that part of Crawford County lying south of the Wisconsin River, was cut off, and organized into the county of Iowa, by the legislative council of Michigan Territory. In 1840, the county of St. Croix was taken from Crawford; out of which the county of La Pointe was organized in 1845.

In 1841, the county of Portage took all that part of Crawford County which lay east of range No. 1, east of the 4th principal meridian; out of which, since that date, the counties of Sauk, Adams, and parts of Richland and some other new counties, have been formed. In 1842, Richland County was formed on the north side of the Wisconsin River, taking all of Crawford County which lay east of range 3, and south of towns 13: that is to say, two ranges each side of the fourth principal meridian, including towns 12 north.

* For a more full account of this grant, see Harper's New York edition of Carver's Travels, 1838, Addenda pp. 345–362. Also, American State Papers, Public Lands, vol. 4, pp. 29–34.

In 1845, the county of Chippewa was organized out of Crawford, so as to lie between the latter and St. Croix, embracing all the country which is watered by the Chippewa River and its tributaries. And in 1851, the counties of La Crosse and Bad Ax were organized out of Crawford, which leaves the latter of but a limited space, being from the middle of towns 11 north, to the Wisconsin River south, and from and including range 3 west, to the Mississippi River. The entire area of the county as it is now bounded and limited is about 558 square miles.

"The history and date of the first settlements, together with the present population," is a more difficult question to answer, and requires more research than the limits prescribed for this communication will authorize or justify.

The first inhabitants of this region, included in the original county of Crawford, of whom we have any knowledge, except from the ancient tumuli, were the Dakota or Sioux Indians. The builders of those tumuli are so far lost in the past, that no pretence is made to a history of them, except in the pretended visions of Joe Smith, in his so called Golden Bible. When the French missionaries and traders from Canada first visited the country south of Lake Superior, east of the Mississippi, and north and west of the Wisconsin, the Sioux were the lords of the soil.

I learned from the Chippewas at La Pointe, when I was agent for the U. S. among them in 1842–43, that previous to their crossing Lake Superior to settle upon its southern shores, the Sioux occupied the whole country south of it, and as far east, at least, as Ke-we-wa-non Bay, then called Che-goi-me-gon; for there, in 1661, it seems they captured and killed the missionary Rene Mesnard, whose cassock and breviary were afterwards found among the Sioux, kept by them as amulets.*

At what period the Chippewas began to occupy that portion of the country south of Lake Superior, and within the ancient limits of Crawford County, it is difficult to ascertain. Their first council fire within these limits, was kindled on the Island of Magdalene, now La Pointe—but when, neither history or their traditions definitely inform us. Whenever it was, the Sioux occupied the main land; and I was shown points and places on the Island, as well as on the main, where the severest of battles were fought between these warlike tribes. From the best data I have, the Chippewas were on this Island in 1722, for about that time a trading post existed there, and how long previously is not determined. In 1665, the Missionary Claude Allouez reached Kewewana, and interposed his influence in preventing a party of young warriors from going against the Sioux; from which it would appear that Kewewana was then the western limit of the Chippewas, on the south shore of that Lake,†

* Bancroft's History of the United States, Vol. 3, p. 147. † Ibid, p. 150.

After the Chippewas had gained a foot hold upon the Magdalene Island, their first move "inland" was towards the head branches of the Chippewa, and resulted in planting a colony at Lake Flambeau. As early as 1659, the Chippewas were near Green Bay, and west and north-west of it to the Wisconsin and Lake Superior, from which the Flambeau colony probably received accessions. And by degrees they extended their conquest down the Chippewa, until the battle field between them and the Sioux was between the falls of Chippewa and Lake Pepin.

In the meantime, this warlike and conquering people extended their excursions to the head of the Lake, and up the St. Louis River; and passing the falls by a nine mile portage, they continued to ascend that river, and the Savannah branch of it,—and by a five mile portage reached the waters of Sandy Lake, on the Mississippi, where they planted a colony. And this region became the battle ground between them and the Sioux in that direction, until the line was pushed down the river to the Sauk rapids. In 1825, when General Cass, as Governor of Michigan and Superintendent of Indian affairs, had a general congress of Indian nations at Prairie du Chien, to settle the boundaries of their respective lands, a dispute arose between the Sioux and Chippewas, as to the line between them. The latter claimed to the St. Peter and the Mississippi rivers, while the former claimed to Lake Superior, and averred that their fathers had always occupied and owned the country to that point. General Cass inquired of the Chippewas "on what ground they claimed the country, the Sioux having occupied it before the Chippewas came to it." Upon this Hole-in-the-day, then but a young man, rose and said, "we claim it on the same ground that you claim this country from the King of England—by conquest." "Then," said Governor Cass, "you are entitled to it." One of the most sanguine battles fought between these tribes was at the mouth of the Crow Wing River, as near as I could learn, from Indian tradition, about the year 1768. The battle lasted four days between 70 Chippewas and 400 Sioux, the most of the latter being killed. In 1843, the remains of the fortifications, such as holes dug in the ground, and breast works thrown up by the Chippewas, were plainly visible; and the affair was explained to me by William Aitkin, Esq.

The next Indian occupants of a portion of the soil in this original county, seem to have been the Sacs, (Sauks or Saukies) and the Foxes, the latter called Ottigaumies by Carver. At what time they commenced their occupation is uncertain. In 1673, and for some time before, they lived on Fox River, not far from Green Bay. But in 1766, Carver found the Sauks at Sauk Prairie, and the Foxes at Prairie du Chien. And, according to his account of the time of building their village—it being thirty years previous to his reaching the place—it must have been as early as 1736, and perhaps earlier. These confederated

tribes, who had been like Ishmael, their hands against every body, and, of course, in self defence, every body's hand against them, were driven from the St. Lawrence step by step, until they were reduced in numbers, and compelled to unite their fragments of bands for mutual defence and self-protection, and settle on Fox River, fifty miles from Green Bay, where in 1706, they were defeated by the French and some allied Indians, who killed and took most of them prisoners.* It is probable that soon after this event they moved over upon the Wisconsin River, and wrested the country from the Sioux; with whom and the Chippewas they kept a continual war, until, as Black Hawk says, in his life by Le Clere, they discovered the beautiful country on Rock River, the occupants of which were weak and unable to defend themselves. Of this country they took possession, driving off the former occupants. This being the way this banded confederated tribe got possession of the countries they occupied, we can have the less pity for them, even if their sorrowful story of frauds practised upon them by the whites were true.

Some where between 1706 and 1736, they must have moved to the Wisconsin; and they were there as late as 1790, as I was informed by Michael Cadotte, who showed me mounds with holes in them for breast-works, about five miles north of the Falls of Chippewa River, which were made by the Saes and Foxes when warring against the Chippewas. The chief of the Foxes, who was first found by the whites at Prairie du Chien, was named Dog; and the Prairie upon which he built his town, was called his, or Dog's Prairie.

After the Sauks and Foxes left the Wisconsin and the country north of it, and took up their abode on Rock River and west of the Mississippi, the Winnebagoes moved from the vicinity of the Lake of their name, to the country vacated by the former; at what date is uncertain. But as the Sauks and Foxes were here in 1790, and not here in 1805 when Lieutenant Pike ascended the river, the Winnebagoes came here probably about the beginning of the present century. At this period the Sioux, Chippewas and Winnebagoes, were the occupants of the soil as hunting grounds. The Menomonees claiming a part of the country west of the Wisconsin, and above the Portage. In 1825, the metes and bounds of these respective claimants were settled, in a general council of all the tribes within reach; and continued so until 1837, when the Sioux and Winnebagoes sold out to the United States all of their claims east of the Mississippi, and the Chippewas sold all that they claimed to it, south of 46° N. latitude. And within ten years the Chippewas and Menomonees have sold out the remainder of their claims, so that the Indian title to the soil is now fully extinguished.

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* Carver's Travels, p. 45.

The first visit of white men to the country within our original limits, appears to have been made by Marquette and Joliet, who descended the Wisconsin River in 1673; but they do not appear to have made any stop, not even to have ascended the Mississippi four miles from the mouth of the Wisconsin, so as to see this beautiful Prairie—if, indeed, it was then occupied by any one.

In 1680, Hennepin ascended the Mississippi from the mouth of the Illinois to above the Falls of St. Anthony, and must, of course, have passed this place, (Prairie du Chien,) and he could hardly have passed it without stopping. But as there is no mention made by him of any settlement, or even of an Indian village, at that time it is probable that there was none. Hennepin says he was released from being a prisoner to the Sioux at Itasti, on the St. Francis River, by a trader, but does not tell where the trader resided. But as, on being released, he returned to Quebec by ascending the Wisconsin, it seems most probable that this trader lived at or near Prairie du Chien. And if so, he being here in 1680, was probably the first trader here.

When Carver visited this place in 1766, he found an Indian village of about thirty years standing, and a trading post of great commercial importance. One of the traders who accompanied him from Mackana, wintered at Yellow River, on the west side of the Mississippi, about three miles above our upper landing. But the site of the village of which Carver speaks, must have been the same as that of our "lower town" at this time. Here we have the tradition of the French, that their fathers first settled and built their fort; and, in attempting to dig a well, they left a cotton-wood stick in the shape of a handspike remaining in it, which, taking root, grew, and is now (the well being filled up) a tree of more than a foot in diameter.

The first regular settlers at this place, were those who came here in the employ of the traders, and leaving that trade settled to farm, fish, hunt or *voyage*, as opportunity occurred. These regular settlers must have been here previous to the Revolutionary War, at least some of them. For the whole Prairie, including forty-four farm lots, and twenty-six village and other lots, was divided off, and claimed by as many claimants in 1793.*

These claims, except two farm lots, lie on this prairie, which is seven miles in extent from north to south; and in width, one and three-fourths of a mile on the south end, from whence it runs to a point on the north. The original claimants occupied by common consent of the Indians; it being a kind of common trading and neutral ground, on which all the neighboring tribes frequently, if not annually, met for trade or other intercourse. In 1818, Congress confirmed these claims to the settlers who were in possession in 1793. The proofs of ownership were taken in 1823; and the farm and village lots surveyed by order of Congress, in 1828.

* American State Papers, Vol. 1.

From all I can learn, there must have been a trading post established at La Pointe on or before 1722, which was probably as early as any permanent establishment of the kind at this place. But as the immense trade on this river and its numerous branches, brought more *voyageurs* to this country than to the Lake at that early day, and especially as the country here offered greater facilities for farming than the Lake country, the settlement here became larger and more permanent than that of the Lake.

There were but few Americans in this settlement, previous to the occupancy of the Fort by the United States army in 1816. In 1805, Lieutenant Pike found a few Americans here; but the most of the traders and settlers were Canadian French. When I moved my family to this place in 1836, there were but three or four American families in the place, out of the garrison and the Indian department. At that time the Indian title had not been extinguished to any portion of the country north of the Wisconsin, except to this prairie, as above stated, by common consent.

In 1830, or thereabout, Judge J. H. Lockwood, under a license from the War Department, and by consent of the Sioux, to whom he paid an annual ground rent, built a saw mill on the Red Cedar branch of the Chippewa, at which establishment some gardening, but no farming was done. In 1838, after the treaties with the Indians of 1837 had been ratified, one company ascended the St. Croix to the Falls; another to the Falls of Chippewa; and, in 1839, another company went to the Falls of Black River—all of them to build and run saw mills. But each became the nucleus of more extended settlements, which have been extending themselves wider and wider, until they settled a part of Minnesota, which has been taken from us; and the counties of La Pointe, St. Croix, Chippewa, La Crosse and Bad Ax, which have been organized from the western portion; and the counties of Richland, Sauk and Adams, from the eastern portion of what was originally Crawford County. Leaving the present county to contain 558 square miles; and, in 1850, 2399 inhabitants. But as the tide of emigration is rushing in upon us at a rapid rate, there is probably from one-fourth to one-third more inhabitants now than then.

"The general formation of the country" is hilly. Some portion of our original county is level, but more of it undulating. The level portions of it are at the heads of the largest streams, where it is apt to be swampy and marshy. Near the Mississippi the hills or bluffs rise in some places 500 feet above the river; but as you ascend the streams, the hills lessen down to a gentle undulation on the small streams, and to a level or marsh and swamp on the larger ones. In the present limits of the county the land is generally hilly or rolling. The level or marshy portions are on the margins or bottoms of the great rivers. The whole of the original, as well as the present county, abounds in streams of

pure water, and abundance of water power. The purity of the waters in the smaller streams and lakes—those that are fed entirely from springs—may be judged of from the fact that they abound with speckled trout. But those larger streams which rise in swamps and marshes, many of them being tamerack swamps, show the effects thereof in the highly colored state of the water.

The Prairie region extends from the Wisconsin, north, by a width of from thirty to fifty miles from the Mississippi, to within ten miles of Lake Superior at its western extremity, with sufficient timber for farming purposes the most of the way. Between the Black and Chippewa Rivers, on the present mail route, the timber is too scarce to encourage a general settlement; but along the river hills, and also east of the mail route, timber is more abundant. East of the Kickapoo, and on the head waters of the St. Croix, Chippewa, and Black Rivers, and on the western branches of the Wisconsin—all within the original county of Crawford—there is no lack of timber; indeed it is generally a dense forest of pine, mixed with hard wood.

Within the present limits of the county, except a dense forest on the east side of the Kickapoo, the country is divided between prairie and timber, and open wood land, so that no portion of it can suffer for want of timber; and except along the precipitous bluffs of the river, there is but little waste land. It can mostly be ploughed, grazed, or kept for timber; and is not more uneven than some of the best cultivated portions of western Pennsylvania, Virginia and Ohio, along the Ohio River.

"The general character of the soil" is good; within the present limits of Crawford County, in Bad Ax, La Crosse, the western portions of Chippewa, and southern parts of St. Croix, it may be considered as first rate. Indeed, it is hard to imagine how it can be improved. Further east and north, when you reach the pine region, the soil becomes of less value, except in places where the pine does not grow.

The soil in that portion of the country first named, is mostly a vegetable mould, formed from the decay of vegetable matter, or its ashes, when burnt over. It is mixed with sand sufficient to give it warmth; and this seems to increase as we go north, showing that nature, or nature's God has provided against the viscissitudes of the climate. The poorer soils spoken of are, in the pines too sandy, and in the marshes too wet, and in a few instances a cold clay.

"Of the crops and the general yield," it would be difficult for me to speak, because I have not sufficient data. Much depends on the mode of cultivation and the season; fifty, forty, thirty, and twenty bushels of wheat to the acre have been raised. So far as I know, thirty of wheat, fifty of corn and oats, and from one to two hundred bushels of potatoes, are considered an average crop.

In the cranberry marshes, which are found at the head of the larger streams, the crops in good seasons are said to average several hundred bushels per acre.

"Of the Manner of Cultivation, and of its defects," I can say but little. The old French settlers, when the Americans first came among them, wrought things as their fathers did two hundred years before. To yoke oxen, they tied a pole across the back of their horns. They had no waggons, and their one-horse carts were without tires, boxes, or skenes on the axles. They usually put in only spring crops. Their wheat, oats, barley, and peas, were sown on the ground, with no other preparation than burning off the weeds, stubble, and grass, of the last year's growth, and ploughed in—the ploughing being usually in the same direction—no crossing, and no manuring.

The ground cultivated was in a narrow strip at the foot of the bluffs, where was the best soil, say from forty to eighty rods wide, and enclosed in one common field from five to seven miles long, having but one fence on the west side, and across each end—the bluffs on the east answering for a fence on that side. The corn planted was of the early Indian variety, which ripens in the early part of September; yielding from thirty to fifty bushels per acre, according to the mode of cultivation. The wheat, oats, barley, and peas, being harvested in August, and the corn in September, the field was usually thrown open in October as soon as the potatoes were gathered, as common pasture. If wood was scarce in the ensuing winter, or before the ice became good for procuring it from the islands and bottom lands of the river, most likely the fence would be used in their stoves, being dry, and the place of the rails would be supplied before spring by new and green ones. These annual changes of the rails, rendered it of little consequence whether they were made of oak, ash, maple, or willow, the three latter being usually the easiest obtained, composed the most of the fencing material of the farms.

The grain cradle was not known here until the arrival of Americans, the scythe and sickle being the only instrument used for that purpose. The French bind their grain with willow withs to this day. In other respects, they have availed themselves of the improvements introduced by the American immigrants, and some of them are now among our best farmers. Most of the new inventions for ploughs, harvesters, and threshing machines, are now in use.

"The Markets are good, and also the facilities for reaching them." From the earliest settlement of the country, the military and Indian departments, including the fur trade, always furnished a good market for our surplus produce, until a short time since when the amount produced has been greater than the demand from that source. To supply the deficiency, the lumber trade since 1838 has kept the demand more than equal to the supply; add to this, the demand growing out of the immigration; so that hitherto the demand for every thing, except wheat, in the two last years, has much more than equalled the home supply. And our prospects for a market are good for a long time to come in our

own country, and nearly at our own doors. The lumber trade; the Indian trade and annuities; the military posts at the north and west of us, together with the continued tide of emigration; to which may also be added the mining interests; all together, bid fair to consume the most of our surplus produce, except, perhaps, wheat.

Within two or three years past, the produce of wheat has been larger than the demand in the country. But the facilities for transportation by steam-boat on the Mississippi, has supplied us with a market in St. Louis. Our merchants purchased the wheat, cleaned it thoroughly, had sacks made of coarse domestic cotton, holding over a bushel each, and sent it to St. Louis, where its superior quality and clean state commanded the highest price, making it profitable for both the producer and the merchant.

The opening of the navigation of the Wisconsin and Fox Rivers, already gives us a choice of markets, between St. Louis and the Lakes, for all we have to spare over and above the up river and home demand. And if, as is expected, the Milwaukee and Mississippi railroad should reach the river at this point, we should have an additional facility for reaching an eastern market. Nor will it make much difference, if any, whether that road reaches the river at this point, or not, so far as the surrounding country is concerned. The road must reach the river somewhere, but if not, some other one will, within a short distance, by steam; so that before our surplus produce gluts the market on this great river, we shall have the double facility of steamboat and railroad whereby to reach an eastern market, and that too at but a trifling expense. As it is well known, that the average of our crops exceed that of the eastern part of our State, after deducting the expense of reaching the Lake, we shall have equal, if not greater profit, per acre, than will our more eastern neighbors.

"Our Stock" is that which is most common to the country. We have no animals of special note, unless it is the pony breed of horses; and not many of them. Our early French settlers came to the country by water, and in bark canoes, or Makanaw boats, and could not bring with them the real Canadian or Norman horse. Indeed I do not remember of seeing one of that breed in this country. If there is one, or more, they must have come by land from some State bordering on Lower Canada. The original stock of horses here, probably came from the South and West, and were from the stock introduced by the Spanish into Mexico, Santa Fe, &c., and from thence spread among the Indians. Carver mentions an expedition of the Winnebagoes towards Santa Fe, and the capture of eighty horses at one time, which they brought home with them. The French settlers here may have obtained horses from their brethren at Kaskaskia, or in Missouri. But in either case they were originally obtained, most probably, from the Indians to the south and west of them.

The present breed of horses, or ponies, are not generally of an extraordinary character. Only a few very great travellers have been found among them. I have, however, seen one of but moderate size, which is said to have travelled before a light train on the ice, from Mount Trompelau to this place, 120 miles, between sun rise and sun down, in February, and that without any visible injury. But whether any of such bottom can be now obtained I am unable to state. Our stock of horses has greatly improved of late from immigration.

The horned cattled in this country, originally came from the States of Illinois and Missouri, and were not of the first quality. Some few of a good quality were obtained from the droves brought up, but generally they were of the ordinary character. Immigration has lately brought some of good quality among us, but I know of none of the imported breeds of the day; though, no doubt, we have some of mixed bloods, which are quite valuable.

Sheep have done remarkably well, so far as they have been tried; they are very hardy, and produce good and heavy fleeces. To show their hardiness and the adaptation of the climate to their growth, I will give the following fact:— In 1837 a drove of sheep was brought to this place for slaughter. One of them, a wether, strayed from the flock and took up its abode in the hills east of this prairie, and within three-fourths of a mile of my house; and strange to tell, but nevertheless true, he escaped notice of men, dogs, and wolves, through two winters, and was discovered and killed in spring of 1839, in good eating order. His hoofs were so worn by travelling over the rocks, that they were but square stubbs. We know that he must have strayed from the said flock, because there had been at that time no other such drove on the Prairie from which he could have strayed. At this time there are a few small flocks of sheep which do exceedingly well, and show, most conclusively, that our hilly and healthy country is well adapted to raising them on a large scale. I have never heard of any disease among them.

As for Hogs, we have some Berkshires, but they have become so mixed and crossed with other kinds, that but few of them can be distinguished. Poultry of of all kinds do well.

"The adaptation of the country to grazing, as compared with tillage," is a question I am not as well prepared to decide as are those of more experience. A few facts, however, may serve to show the grazing qualities of the country. The French here who usually own large droves of horses, seldom, and some of them never feed them in winter, except such as they use; and, in the spring, they are in tolerable order. In our low bottoms and ravines, where the wild grasses grow high and rank, they are sometimes beaten down by the fall rains and snow; in which case the snow usually covers a large quantity of green substance which the horses reach by pawing away the snow, if snow is there. If the grass is not beaten down by the snow, but stands up and reaches above it, then they eat off

the tops. And what is remarkable in this country, this dry grass, reaching above the snow, is eaten with avidity by the horses; and from the fact that they keep in good order on it, it must have considerable nutrition in it, even in that dead and dry condition.

There are, however, other means of grazing in the country. On some of the islands and river bottoms, there are not only thickets of under-brush on which the animals browse, but rushes abound in many places on which horses and cattle will even thrive through the winter. These rush beds are not very numerous; they abound most in the thick timbered regions where the wild grass is thin, or does not grow at all. In the winter of 1842–3, when the hay failed at the Falls of the Chippewa, the cattle not wanted for immediate use were driven to, and watched in, the rush bottoms. In the same winter, a party of us *voyaging* with horses through to Lake Superior and back, our hay and oats having failed we were obliged to resort to the rushes, on which our horses subsisted three days before we reached the settlement.

The quality of our prairie hay is said to be better than the same article further south. Those who have lived in the southern parts of Illinois and Missouri, say that they can winter cattle easier in this region than in the former places. They think the grass here makes more substantial hay, probably from not being so much drenched in summer by the rains. But a principal reason why cattle can be easier wintered, is the character of our winters. We are not one day in mud and wet snow, nor being drenched with rain, and the next day frozen into icicles. Cattle under such sudden and repeated changes, cannot do as well as with us, where but few such changes occur, probably not more than one or two, and sometimes not one through the whole winter. Dry snow, and dry cold weather, even if somewhat severe, when it comes on gradually, and is uniform, does not effect man or beast, as does the contrary kind of weather. If it requires much labor to provide a winter's stock of provender, we have good health and physical strength to perform it. And we are satisfied to work if we have health, rather than get along without it, and shake half the year with the ague and fever. If our cattle cost us more to raise and keep, they bring a better price when raised, than do those that come up themselves in sickly regions.

As between grazing and tillage, I think there is but little to choose, if either is to be pursued by itself. But both together is certainly preferable; because the straw and stalks from tillage go far in wintering cattle, which would be a loss if we had no cattle to eat them.

"Of Dairies" we cannot say a great deal, having but few; but we could say much in favor of their establishment. What few dairies we have are on a small scale, but have been and are very profitable, and would, no doubt, be more so on a large scale. I have already stated the facility we have for raising and winter-

ing cattle; these, of course, are necessary to a dairy, and so far it is an encouragement. The next, and indeed the great question is, as to the market for the products of the dairy. And of this, let facts answer. The most of the cheese consumed in our mines, our pineries, and on this entire frontier, is made on the Western Reserve in Ohio, and transported 2000 miles by the rivers; and having changed hands several times, each of which must have some profit to pay for freight, storage, commission, &c., the price realized by the producer cannot equal more than half the cost to the consumer. Having lived myself on that Reserve, and having some knowledge, by experience, of the cost of clearing land, and getting it into grass, the crops obtained, &c., I am certain that cattle can be raised and kept in this region for one-half the expense necessary to be incurred for the same purpose in that country; and, of course, if the products of the dairy here equal the products there, per head of cattle, and the producer here realizes no more than the producer does there, the business must be much more profitable here than there. But if the producer here realizes double what the producer does there, and that too at one half the expense for raising and keeping cattle, then the business is proportionally more profitable. The only difference, and the only drawback in this country in this business, is the difference in the wages of hired help. But the difference in costs and prices in favor of this country, will more than balance the difference in wages.

The extent of our "Horticultural" experiments are but limited. That the country is adapted to the growth of fruits, is evident from the fact, that the wild fruits indigenous to this climate are very adundant: such as crab apple, plum of some dozen or twenty varieties, grapes, cherries, currants, raspberries, blackberries, strawberries, and several other varieties.

The French who first settled Detroit, planted apple trees, pear trees, and various other kinds of fruits. And judging from that fact, I expected to find such trees in abundance in this region. But in this I was disappointed; finding of their planting but a few apple trees, and these of an indifferent quality.

About the year 1830, General Street, the Indian agent, brought a lot of apple trees from Kentucky to this place, and set them out on a lot at the north end of this prairie. They have had but little care, and are natural fruit, yet they have grown well, and are very fruitful, when not injured by the frost. In 1838, I procured fifty grafted fruit trees from Kentucky, the nearest place from which I could then procure them. But the distance of transportation and change of climate must have affected them. Furthermore, the warmth of the steamboat caused them to bud in the moss in which they were done up, so that but four or five of them lived. I have since tried seedlings of this country's growth, and though I have had bad luck—the mice and careless ploughmen injuring the trees—yet there are some fine and very promising orchards in the country. What is

wanted is a nursery in the country, so that the trees will become acclimated, and there can be no doubt but that apples, pears, and plums, will do as well as in any country as far north as this.

As for peaches, our hopes and prospects are not so flattering. In 1846, I had twenty peach trees, which, in March, showed buds for as many bushels of fruit; but a severe frost in April killed them down to the very roots. A neighbor of mine had beat me, in that he had thirty or forty bushels of the fruit the season before, and had hopes of a hundred at the time, but his shared the fate of mine, or nearly so. A few sprouted, and made a great effort to live. We could raise peaches here, if we could prevent the sap from starting before the late severe frosts in the spring. I do not agree with the theory, that hard freezing before the sap has started kills these trees. For forty years I have watched these trees in the west, and I have never been satisfied that either the fruit or the tree has been injured by the frost before the sap starts in the spring. But invariably, if the sap has started, and is followed by a black frost, that is, something harder than a mere white frost, the fruit, if not the tree, is killed.

Various remedies have been tried and recommended for this evil—a northern declivity, covering the roots with straw when the ground is frozen, &c. But the best, as I think, is engrafting the peach upon the wild plum. The plum, we know seldom fails of bearing fruit on account of frost, because it is late in putting forth its sap; and if the peach top is dependent on the plum root for sap it cannot get it, nor start its buds, until the plum root—according to the law of its nature—gives it. And as that period is so late, that the frost usually does not injure the plum, neither can it injure the peach. Another advantage of this mode of grafting is, that the worm has sometimes killed the peach by goring its root; but that occurrence, as far as I know, never happened to the plum.

The raising of peaches in this climate, is a desideratum of which most persons despair. It is laid to the climate; but in this I think they are mistaken. Lower Canada, Vermont, New York, Northern Pennsylvania, Ohio, and I think Michigan, once were favored with abundance of this delicious fruit. In 1812, when I first emigrated to Northern Ohio, those farms which had been long enough cleared to have peaches on them, abounded in this fruit. And the trees and fruit continued to grow and do well until about the year 1830, when the late spring frosts began to kill—not merely the fruit, but the trees themselves. And what is singular, the frost took those in the vallies in one year, and those on the hills in another. And so on from one location to another; until, in 1836, when I left that country, there were but few peaches left. And from the newspapers I learn that since then, this same cause has worked farther and farther south, until fears are entertained of the loss of this fruit as far as Philadelphia and Baltimore.

Now, from all this, the evil appears to be in the changes in the seasons, and not in the climate. The climate in the same place must be the same. But seasons have changed and re-changed since the settlement of America, and favorable seasons may yet come round to us again in this matter.

Respectfully yours,

ALFRED BRUNSON.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

AGRICULTURE OF DANE COUNTY.

BY JOHN Y. SMITH, MADISON.

GEOGRAPHICAL SKETCH.

Dane County, so called in honor of Nathan Dane, of Massachusetts, who drafted the celebrated ordinance of 1787, for the government of the North-west Territory, and under which five free and vigorous States have grown into existence, is situated midway between Lake Michigan and the Mississippi river, its southern boundary being twenty-four miles north of the south line of the State. It is bounded on the north by Columbia county, on the east by Dodge and Jefferson, on the south by Rock and Green, and on the west and north-west by Iowa and the Wisconsin river. Its extent is forty-two miles from east to west, and thirty-five miles from north to south, containing a fraction less than thirty-townships, or one thousand two hundred and sixty square miles.

Lakes.—The principal Lakes in the county, are the Four Lakes, designated as the First, Second, Third and Fourth Lake. The First and Second each cover an area of five or six; the Third about ten, and the Fourth about fifteen square miles. This chain of Lakes extends from north-east to south-west, a distance of about seventeen miles. Madison, the county seat of the county and capital of the State, is situated between the Third and Fourth Lakes, upon a high rolling strip of ground, from one-half to three-fourths of a mile in breadth, and commanding a fine view of the Third and Fourth Lakes. According to the census of 1850 the town contained 1871 inhabitants, and the population of the county was 16,654.

Streams.—The principal streams in the county are the Catfish, Koshkonong, Black Earth, and Sugar River. These streams furnish sufficient water-power to meet the ordinary wants of the country, but not adequate to extensive manufac-

turing operations. The Catfish has its rise in the northern part of the county, and runs in a south-easterly direction through the four Lakes, and unites with Rock River, in Rock county. The Koshkonong rises in the eastern part of the county, and runs in a south-eastern direction, and discharges its waters into the Koshkonong Lake. Sugar River rises in the south-western part of the county, and runs in a south-eastern direction through Green and a corner of Rock, and unites with Rock River in the State of Illinois. Black Earth Creek has its rise near the centre of the county, a little west of the Fourth Lake, running in a north-westerly direction, and uniting with the Wisconsin river near the north-east corner of Iowa county. These streams and their tributaries, together with many other streams of less magnitude, water most parts of the county abundantly for agricultural purposes.

Mills.—There are ten or twelve saw mills in the county, propelled by water, and two propelled by steam, and eight flouring mills, the most extensive of which is that of Leonard J. Farwell & Co., at the outlet of the Fourth Lake, near Madison.

Face of the Country.—The general surface of the country is of a gently undulating character, the exceptions being found in the vicinity of the Wisconsin River, and such of its tributaries as have their rise within the county. In these localities, particularly along the Black Earth Creek, are found the bold, precipitous bluffs and deep ravines peculiar to the valley of the Wisconsin, with these exceptions, there is but very little ground in the county too rough for cultivation. The *Blue Mounds* are two high hills rising out of a surrounding plain, united at their bases, but terminating in separate peaks at an elevation of about one thousand feet above the level of the Wisconsin river. They are located twenty-five miles west of Madison, and the county line between Dane and Iowa, passes north and south between the two mounds. The summit of the east mound, which is the higher one, is the highest point of land in Dane county, and may be seen from many positions in the central, northern, and eastern portions of the county, at a distance of twenty-five or thirty-five miles.

Prairie and Timber.—With the exception of a narrow belt around the north-eastern shore of the Fourth Lake, there are no native forests in the county. In the northern and western portions of the county there are extensive prairies, and consequently (especially in the northern townships) a scarcity of timber; but in the eastern and southern portions of the county the burr and white oak openings predominate, and afford an adequate supply of timber, though not of the best quality for building purposes.

Marshes.—With the exception of some irreclaimable specimens about the sources of the Koshkonong, in the east part of the county, marshes are not inconveniently numerous nor extensive. They are valued for the supplies of hay

they furnish, which, when properly cured, is considered nearly or quite as good as English grass. It is also observable, that the marshes are gradually being recovered from the dominion of the waters, the drier portions becoming susceptible of tillage, and other portions which were formerly too wet for mowing, becoming adapted to that process. This change is being effected, not by the expensive process of draining, but as the natural result of opening the soil of the adjacent land for cultivation, in consequence of which it absorbs a large portion of the water which the hide-bound soil was wont to shed off into the marshes and streams. And we may confidently expect that this reclaiming effect upon the marshes will continue to be felt, until the arable land is all brought under cultivation. The advantage which the farmer will derive from this fortunate circumstance, will be, that much of his marsh land, which was once too wet even for the wild grass, will be recovered for that product, while the drier portion will become prepared for the reception of English grass, which, if not materially better in quality, will excel the wild grass in quantity, in the ratio of about three to one upon the same area.

General Character of the Soil.—The soil is generally a sandy loam—the proportions of sand, clay and vegetable mould, of which it is composed, vary in different localities, and with the undulations of the surface, vegetable mould being most abundant in the prairie and bottom lands, sand in the burr oak, and clay in the white oak openings. As the soil is penetrated, clay becomes more predominant, until, at the depth of from twelve to eighteen inches, a subsoil of brown clay is reached. This deposit is from two to five feet in depth, and sufficiently compact to prevent the leaching of the soil. Below it various formations are found in different localities; but the most common, so far as observations have been extended, is a sandy gravel of great compactness. As we approach the Wisconsin River, the sandy quality of the soil becomes more predominant. In the eastern part of the county and extending a little west of the center, granite boulders of almost every variety abound; but in the western portions these mysterious strangers disappear. Limestone, more or less mixed with sand and flint, is very abundant in every part of the county, and the soil, of course, is well supplied with lime. In the vicinity of Madison, and in some other localities, sand-stone of excellent quality for building purposes is found.

Agricultural Products.—From the foregoing description of the soil, it will readily be inferred that it produces, in greater or less perfection, all the varieties of grains, grasses, esculent roots and fruits, commonly found in the temperate latitudes; but as some of those products flourish much better than others, some notice of particular products, and the causes of their success or failure, may be profitable.

Wheat.—During the first few years of the settlement of Dane County, (and the remarks which follow will apply to the whole of Southern Wisconsin, (this

important staple succeeded well; but for the last four years, it has proved almost an entire failure. The chief causes of this failure have been three-fold: First, the slovenly and ruinous practice of sowing small grains, and in many instances wheat after wheat, three or four years in succession, upon the same ground, without seeding or summer fallowing, which gives the infant plant a feeble constitution, choked and poisoned by noxious weeds. Second, the changeable temperature of the winters, and the absence of snow to protect the roots from the destructive effects of alternate freezing and thawing. Third, the further injury of the sickly product by untimely rains during the harvest season. The existence of the two first named causes is shown by the fact, that during these years of failure the crop has generally succeeded best upon sod ground, or ground newly broken up. In such cases the ground is clear, and the wheat gains undisputed possession, whilst the compactness of the soil and the firmness with which the whole mass is held together by the complicated interlacings of the roots of the native grass, prevents the roots from being thrown out of bed by the process of freezing and thawing.

It is obvious that the first of these causes of failure may be entirely removed by a more thorough and scientific system of cultivation, which will readily suggest itself to every farmer. The effects of the second cause may, to some extent at least, be guarded against. The soil of the prairies and openings is very loose and porous, and the roots of the wheat are, consequently, very much exposed, under the most favorable circumstances in respect to season; and by the alternations of freezing and thawing, this exposure is proportionally increased. The concurrence of these unfavorable circumstances may be avoided by ploughing in the seed, or, perhaps, by the use of the cultivator instead of the harrow, and then compacting the soil by the free use of the roller. The repeated failure of winter wheat, has induced many experiments with spring wheat, and a variety called the hedge-row, has been quite popular; but it is found to deteriorate very rapidly in places where it has been tried a few years in succession—the heads becoming shorter every year and the product less. This is evidently a migratory species which will not flourish in a fixed locality. But spring wheat, of whatever variety, is a poor crop to depend upon for exportation out of the State, as the very best quality cannot compete in the market with good winter wheat. From observation and reflection, I am of the opinion that Wisconsin farmers cannot depend upon the culture of wheat to balance their trade with other States. I have been a careful observer of the climate of Wisconsin, and judging from the experience of twenty-four winters, I am satisfied that in two winters out of three there is not snow enough to afford the necessary protection to winter wheat. The product requires a snowy country, a peculiarity which is rarely identified with that uniformity of surface observable in Wisconsin.

The coarser grains, adapted to the rearing and fattening of cattle and hogs, uniformly succeed well. The yellow dent Indian corn succeeds better in Dane and some of the adjoining counties, than in most localities in the same latitude, and is generally cultivated in preference to other varieties. The quantity of black sand mixed with the soil, in the prairies and openings, has the effect to bring forward and mature this crop with great rapidity, when the warm season arrives. The soil yields large crops of rye, barley, oats, &c., with rare instances of failure. Flax flourishes well; and so soon as mills are erected for the manufacture of linseed oil, it is believed that it will be a profitable crop to raise for the seed.

The usual variety of esculent roots are produced in the county in great abundance and with but little expense, the soil being peculiarly adapted to their growth. The potatoe crop, for the past two or three years, has suffered much from the potatoe disease. In this region, potatoes planted on new ground have suffered less from the disease than those planted on old ground; and some of our farmers are of the opinion, that entirely new ground broken up in the month of June, with seed dropped in the furrows as the breaking progresses, so as to be left near the crevices of the sod, will uniformly produce a middling crop, and a sound and healthy product; and that while the disease continues to prevail, this is the only sure method of obtaining a supply of this indispensable vegetable. The fact that this product is less liable to disease in new ground than in old, (so far as it may prove to be a fact,) would seem to indicate that the cause of the disease resides in the soil rather than in the seed; and this indication is corroborated by the well known fact, that old grounds, or those which have been ploughed for a number of years in succession, are frequently infested by insects which are seldom found in grounds newly broken up. The striped bug, so destructive to vines, and the cut-worm, are examples in point. But this indication is not to be relied upon with absolute certainty, for the cause of the disease may reside in the seed, while some conditions of soil may be favorable, and others unfavorable to its development. The mystery in which this singular disease seems to be involved, and the great value of the potatoe crop, should admonish the farmer to use every precaution, both in respect to seed and soil, which promises even a mitigation of the evil.

I do not recollect to have seen any account of this, or any similar disease, attacking other vegetables; but last fall I noticed in my garden, apparently the same disease preying upon the ruta baga. I sowed a patch of ground, upon which, for three years in succession, I had tried in vain to raise potatoes, which were as often destroyed by the rot. The ruta baga plants grew well until the bottoms were about two inches in diameter, when the outside leaves turned black, withered and dropped off, and from that time forward the bulbs grew slowly, and the necks of the plants spindled up, in many cases a foot above the

bulb. In gathering them, I discovered that nearly every plant which had been thus affected was decayed or decaying in the center, and many of them were reduced to a mere shell. The year previous, I planted some winter squashes on, or so near the same ground, that the vines ran over it, and the fruit was produced amongst the potatoe vines, which were badly smitten with the disease. The result was, that although the squashes attained their usual size, (being the large, oblong, green-shelled variety,) yet when I came to gather them, I found about half of them were in a decaying state, and in some cases, nothing was left but a thin shell. The appearance and smell of the decayed matter in both cases, were very similar to that observable in the diseased potatoe, and the disease was doubtless the same. In the latter case, the disease may have been communicated from the potatoe to the squash, and furnishes no direct evidence that it originated from the soil, or any insect infesting it. But the appearance of the disease in the ruta baga the succeeding year, when there was not a potatoe growing in the enclosure, corroborates further the evidence before adduced, that the cause of the disease exists in the soil and not in the seed. It seems probable that similar phenomena must have been observed elsewhere, and may have been noticed in agricultural journals which I have not been accustomed to read. At all events, the liability of other plants to the potatoe disease, is worthy of careful investigation, as it may lead to the discovery and removal of the cause.

Dairy.—The dairy business is much neglected in Dane, as well as in most other counties of the State. The products are not sufficient to meet the home demand, and large quantities of butter and cheese, especially the latter, are annually imported from other States, and bear a higher price than in most of the Eastern States. The deficiency in these products is attributable to a variety of causes. First, the importance of this branch of husbandry is not duly appreciated. Second, many are prevented from engaging in it for want of the necessary capital. Third, a large portion of our farming population are foreigners, who have not sufficient knowledge of the business to enable them to produce a saleable article. A fourth, and more effectual cause of the deficiency is, the habit of depending upon the wild grass of the prairies and openings for feed. From about the first of May till the middle or last of July, the wild grass is as good as any, and, in most localities, sufficiently abundant; but the difficulty is, that this resource fails at the very time when feed is most needed. The soil, in its natural state, is so hide-bound by the accumulation of grassy roots, that the grass is thin and light, and unless the range is very extensive in proportion to the number of cattle grazing it, the supply is soon exhausted, and is not usually replenished by a new growth, as is the case of cultivated grass; and where the supply does not become exhausted, the grass, about the first of August, becomes dry and tough, and not adapted to the secretion of milk, even

if cows would feed wholly upon it, which, usually, they will not, but prefer to range far and wide, and crop the seedy heads of the endless variety of wild plants which abound in the open country, and which furnishes them with nutriment much better adapted to the secretion of fat than of milk. The consequence is, that during the fall months, and season for laying down butter, the cows fail of their milk, and what should be the most profitable part of the year for the dairy business is lost.

The obvious remedy for this evil is, the cultivation of English grass for purposes of pasturage. The advantages of such cultivation will be, that one acre of good English grass will afford as much food in the course of the season, as five or ten acres of wild grass, and enable cows to fill themselves without working off half the aliment they obtain in efforts to find it, and the feed will continue fresh and good until winter sets in, and keep the cows in milk through the season in which it can be turned to the best account. But here a difficulty presents itself. The soil, in most localities, is poorly adapted to the production of English grass. The soil of the open country is too loose and porous for the ready production of a sod to shield it from the rays of the sun, and keep in the moisture. But this difficulty will be overcome as the land gets older, and manure is applied, and the subsoil becomes mingled with the surface by deep ploughing. It has often been observed that the clay found from two to four feet below the surface, when thrown from excavations and spread upon the surface, will produce a very rank growth of timothy grass, or red clover; and I have seen wheat growing upon earth thrown from a depth of five or six feet below the surface, which appeared as strong and thrifty as that growing in the surface soil. These facts illustrate, at once, the inexhaustible powers of the soil and the advantage of deep ploughing, as the soil becomes worn, or when seeding becomes desirable; and suggests the query whether, as seeding becomes necessary, any better dressing could be applied to the loose soil of the prairie and burr oak lands, than the clay which is found immediately below it; and also, whether deep ploughing, or a dressing of clay, would not be advantageous to the wheat crop. But even with the natural capacity of the surface soil for the production of grass by ordinary management, its cultivation cannot be a matter of indifference to the dairy interest.

Fruit Trees.—It has been sufficiently demonstrated that the soil and climate of this country are well adapted to the growth of all the varieties of fruit trees common to the northern and middle States of the Union, with the exception, perhaps, of the peach, which has generally failed from a peculiarity of the climate and not of the soil. The tree thrives well during the growing season, but kills down in the spring. The warm days which usually occur early in March, starts the sap prematurely, which, being frozen by subsequent frosts, bursts the bark and destroys the limbs, and frequently the entire trunk of the tree. This catas-

trophe may be, as it often has been, avoided by placing chaff, straw, or chips around the roots of each tree early in the spring, so as to protect the roots from the influence of the sun during the early warm days above alluded to, and keep the sap down until the frosty season is past. I have seen instances in which the tree has succeeded well without these precautions, as in village door yards, where they have been planted in soil covered with a dressing of clay thrown from the cellar, and spread over the yard in the way of levelling up, and upon which grass had been sown, and a heavy sod formed. It is also remarkable that trees which have been protected through the spring by artificial means, until the roots have struck deep in the soil, are less liable to injury from spring frosts than in the early stages of their growth. These facts seem to suggest the propriety of setting peach trees deep in the soil, and that they will succeed with greater certainty and less care, though their growth may be more tardy, if the ground is well seeded to grass.

Apples, Pears, Plums, and Cherries, uniformly succeed well, and come forward much the most rapidly in cultivated ground. One great defect in the horticulture of Dane, and, in fact, of the whole State, is the neglect of the pruning-knife. I have often been pained, and so has my jack-knife, as I have travelled about the State, to see young orchards, evidently of several years standing, presenting a dwarfish, scrawny, scrubby appearance, and all for want of seasonable pruning. Some suppose this course to be necessary to avoid injuries from the high winds which prevail during the spring and autumn; but the perfect safety with which the opposite course has been pursued, in some instances, is a sufficient refutation of such a notion. The first object should be to train up a smooth, healthy trunk, of sufficient height and size to protect the fruit from the cattle, and afford sustenance to a capacious top, which will form fast enough when the proper time arrives.

Apportionment of Labor to Surface.—The large amount of surface usually cultivated by many of our farmers, and the imperfect manner in which it is done, has been the subject of general remark; and various opinions prevail as to the degree of perfection in cultivation which should be arrived at by western farmers. Many, and amongst them some agricultural journalist of high respectability, observing the comparatively small crops, per acre, in extreme cases, of the imperfect cultivation of a large surface, have run to the opposite extreme, and insisted upon taking the highest examples of English agriculture for imitation amongst us. Admitting that, in western agriculture, the labor applied is generally spread over too great a surface, it by no means follows that the system of high cultivation adopted in the crowded countries of Europe, is suited to our condition and circumstances. Where land is abundant and cheap, the desideratum should be, to obtain the greatest amount of produce from a given amount

of labor, without much regard to the quantity of land used, if it be so used as not to exhaust its productive powers. On the other hand, where land is scarce and bears a high price, and labor is comparatively abundant and cheap, the desideratum naturally is, to obtain the greatest amount of produce from a given quantity of land, without much regard to the amount of labor bestowed upon it. The former is our condition at present. When our public domain all becomes occupied, and as population begins to crowd upon the means of subsistence, it will become our interest to apply more labor to the same surface. And as population goes on increasing, the proportion of labor which may be applied to a given surface will continue to increase, until the increased product will no longer sustain the labor necessary to its production; and here the utmost limit of population will be arrived at. It is quite conceivable that labor may be spread over too great a surface to secure the first desideratum—the greatest quantity of produce to a given amount of labor, and the wisdom of our farmers will best be manifested by observing a rational medium.

AGRICULTURE OF DANE COUNTY.

By T. T. WHITTLESEY, Pheasant Branch.

Dane County contains over 1,000 square miles, most of it good arable land, and excellently well adapted to farming purposes—endowed with a fertile soil, suitably apportioned between rolling prairie of moderate extent and woodland, not heavily timbered nor hard to be subdued, yet furnishing a sufficient supply of fuel and materials for building—free from sterile tracts and mountainous regions, with very little waste land or unreclaimable marsh—favored with numerous lakes supplying fish of the finest flavor, with water-courses for mills and manufactories, and copious springs of water—with low meadow yielding annually abundance of good native grasses, and a soil adapted to the growth of all of the ordinary agricultural products. Situated midway between the Lakes and the Mississippi, it has the advantage of the Eastern and Southern markets. Possessed of a healthy climate, a productive soil and central position, nothing is wanted to make this county rich and populous but to have her capacities properly understood and rightly developed.

Our soil contains varied proportions of the primitive earths—some parts have an excess of clay and some of sand—but lime stone is found in great abundance and can easily be supplied in a pulverized state to correct the deficiencies of a superabundance of either. We have strong and light soils, dry and moist, with a greater or less depth, all productive, but each requiring a different cultivation,

and suited to the growth of different products. The substratum under the surface and subsoils, as is evidenced in digging wells, changes in some localities from a pure sand to a stiff clay, requiring in the one case a strong curbing, in the other none at all, and within short distances of each other. The knowledge of the character of the soil is necessary to cultivate it aright, and to insure a certain return crop. The failure in production is more owing to the misapplication of seed to its appropriate soil than is generally imagined. Potatoes have grown well the last season in a sandy soil, when they have failed and rotted in a stiff clay. The Agricultural Societies of this State are organized to present the essays made by the agriculturist in every kind of culture, to make known the best mode of tillage, of making and applying manures, and the most improved mode of husbandry in its largest extent. Every farmer ought to lend his aid to these Societies which are formed in all agricultural districts, and which, through the medium of agricultural papers, are cheaply disseminating that knowledge which all cultivators of land require.

Writers on agriculture mention four kinds of earths which enter into the composition of soil. These earths they term primitive, because there are only four kinds, viz.—clay, sand, lime, and magnesia. The latter ingredient is seldom found, but the former three are every where abundant. The coat, or outer covering of the earth, denominated soil, is found to consist of a mixture of these earths, forming a stratum or layer varying from a few inches to several feet in depth, and takes its color from the admixture with it of the decomposed animal and vegetable substance upon its surface. This decomposition of vegetable and animal matter is termed mould, and the fertility of the soil is indicated by the greater or smaller proportion of mould which enters into their composition. Beneath this upper stratum of soil, in which plants are produced, is a mass of earth to which the term subsoil is applied, and is distinguished by the absence of mould, or vegetable and animal matter in a state of decomposition; and on the nature of this subsoil depends much of the value of the surface soil. These primitive earths although when combined form a fertile soil, yet in their simple and pure state individually are entirely barren. A plant will not grow in clay, sand, or lime, in their pure or original state; but when these earths are combined in proper proportions with each other, they constitute the most productive soils. It is important, therefore, to the farmer to ascertain the relative combinations of the various earths in the farm he is to till, so as to be able to cure any defects in his soil. There is no mode of improving the fertility of a soil so permanently efficacious as that of adding to the land a proportion of the earthy ingredient of which it is naturally deficient. If the soil is clayey and too adhesive when soaked with rain, it then dries and bakes, it may be improved by the application of lime, sand, or animal manures. If the soil is too sandy or silicious, and too porous to retain

moisture, this defect may be cured and the soil rendered more cohesive by ashes, lime, clay, and vegetable earth. Lime is an important agent, and is a necessary ingredient in the organization of plants; it is closer than sand, and much less adhesive than clay, and occupies a middle region between the two, free from their imperfections, and blending their common qualities—each kind of soil is adapted to the growth of particular plants. A rich sandy soil is best fitted for the production of rye, barley, and roots; while they yield to the richer clays in the power of producing wheat. The farmer then should understand the nature and properties of his soil, that he may know how to improve it, and be regulated by a correct knowledge of its ingredients, and their adaptation to the plants he is desirous of cultivating.

The Dane county farmer can produce every thing that is wanted for home consumption, and much for the foreign market. In Middleton, a farmer raised forty bushels of wheat to the acre. Oats yield from forty to sixty bushels, and I think some tracts have gone as high as eighty bushels. Unfavorable as was the last season some farmers have succeeded better in their corn crops than in any past season. Barley does well, fruit trees grow vigorously, the tame grasses are easily cultivated, and this county is as highly favored for stock raising as any country can be. But owing to the unsettled state of our population, our farmers have not had time and leisure to fix upon that mode of tillage which will yield the greatest profit. Their first object seems to have been to raise that which is soonest convertible into cash, to meet current expenses, and for that purpose have relied on wheat. The causes of our failure to raise this staple must be investigated, but at present we have not time to examine it. My aim is to exonerate the soil from censure, because the culture of it may have been unprofitable—our lands are too fertile and too cheap to be well cultivated. The wasteful improvidence and bad husbandry of the farmer stands out in bold relief all round the farm, in the place of good ploughing, good seed, and good fences—good ploughs and good ploughing constitute the great secret of good crops; but this most important part of successful tillage is passed over to incompetent hands. Agricultural labor is far less remunerative than it should be, and less than mechanical labor from the want of that division of labor which is so successfully applied in other arts. These embarrassments, peculiar to the first settlement of a country, will be relieved by time and experience. It is enough now for us to know that our soil contains all the elements of wealth; and it remains to science, industry, and economy, to form them into rich sources of affluence and independence to their possessors.

That the agricultural class in this county is depressed, and the farmer discouraged is a fact. It may be proper to inquire into the cause—how men, in the midst of all the elements of wealth, can be too poor to pay their debts and their

taxes. The farmers of this county, and I think in other counties, are sensible that their tendency is downward; or rather, as their lands are notwithstanding most certainly advancing in value, that they lack present means to meet present expenses. A common ordinary farmer is not inclined to read a philosophical essay on the analysis of soils, nor can he recognize in poetic fancies on the pleasures of a country life, any counterpart to his own experience. He can realize, however, that he is or is not getting ahead, and that some change is demanded to render his condition more hopeful than it now is. Men have come here to settle on farms because land was cheap—have little or no capital—poor houses, and no barns—a small supply of stock—some land under the plough and fenced—embarrassed with the payment of interest, taxes, and store debts—and depending on the next crop of wheat for relief, which, when gathered and taken to market, afford no profit on the cost of production; and yet our climate is one of the most healthful in any country—our soil fertile—plenty of fuel and materials for building—good roads for intercommunication—ample provision for schools; but while high priced lands, manured and fenced at a great expense, in older States, yield an ample revenue from which can be erected costly houses and barns, our farmers, from cheap lands and soils of virgin mould, derive little surplus on the cost of production, is it not time to inquire into the causes of this great depression and their extraordinary condition.

I assume it as a fact, that an industrious farmer having a team, can cultivate forty acres of land without hiring much labor. From this tract he can raise enough to supply his family and stock. By owning no more land than he can cultivate with profit, he avoids the payment of an excess of interest and taxes which are exorbitant in every new settled country. By his labor he can supply himself with firewood; and if he keeps a few sheep, he can also supply himself, by exchange or manufacture, with cloth. By abstaining carefully from contracting debts, he will be able to hold on to his surplus products, and sell them in the highest market. If he regards time as money, he will be as saving of one as the other, and will constantly be preparing by small advances to build his barn, fences, and out-buildings, which are indispensable to the prosecution of his work. He must reflect that the wealthiest men have begun at the bottom and worked upwards. Now it seems to me that the ownership and cultivation of too much land is one cause of the farmer's embarrassment—his interest, his taxes, his hired labor are all increased. These, added to the debts of the merchant, the physician, and perhaps the lawyer, swells his indebtedness beyond his ability to pay. Another cause of the farmer's embarrassment is bad husbandry. If the article produced will not pay the cost of production, it must be pronounced bad husbandry to produce it. Wheat has been the great staple of this country, and our soil will raise wheat; but it will not pay to take wheat to market at the present prices.

We have depended on wheat for cash, but we have leaned on a broken reed—What else could we have raised at a handsome profit? Ten tons of broom corn, cleaned from the seed, would have brought at Milwaukee the past season, in cash, seven hundred dollars. I suppose two acres will produce a ton. It is as easily raised as Indian corn. Has a single load been carried to the Lake this past year from Dane County? The culture of tobacco is profitable. I have been informed that one acre will produce $100 in tobacco. Flax and grass seed are cash articles. The dairy business is a source of profit. Wool-growing is also profitable; wool being easy of transportation. It is estimated that Michigan has received seven millions of dollars for her wool. Indian corn is a more valuable article to raise than wheat, it is convertible into beef and pork; and stock raising is better than raising wheat. Fruit trees will be a source of great profit, and now is the time to plant them. Now what does Dane County produce to get a return for what she expends? We buy our brooms—not make them. We buy our cloth instead of manufacturing it. We purchase from abroad our cheese, and make but little. And if farmers will raise wheat, have they subsoil ploughs, rollers, and do they change their seed?—do they spread their straw over the land, or burn it in the stack?—do we attend to rotation of crops, or consider that a plant will not grow in rich soil, if the aliment for the nourishment of that plant is exhausted by repeated cultivation? We are on the great ocean of life, and if breakers are a-head, like good sailors, we must tack about or perish—for we shall labor for that which is not bread.

A well cultivated farm must have a constant and permanent owner. And to this end it must be paid for, and then it will be cared for. Durable fences, substantial buildings, and all the outfits auxiliary to the right accomplishment of the farmer's plan of husbandry will then be erected—orchards will be planted—improvement will follow improvement. He will not only endeavor to make his grounds profitable, but pleasant and ornamental. It then becomes an object of attachment, and the farmer enjoys his comfortable home. He not only has enough, but something to spare, and helps onward the great cause of temperance and benevolence in this age of progress.

Our imports exceed our exports—we pay out more than is paid in. This county has paid out sums of money for threshing machines, reapers, fan mills, and nearly all the implements of husbandry except ploughs. We import our rakes, brooms, pails, all our earthen and stone ware, cloth, cheese, and frequently butter and pork; our grass seed, cattle and horses, besides foreign merchandize brought in by the merchants. Our indebtedness is immensely heavy; we manufacture comparatively nothing. This policy is ruinous, and will conduct to inevitable bankruptcy. My advice is, keep from debt, change and improve your mode of husbandry, own and cultivate less land, and expend your profits and

time on your farm. Corn husks will make beds superior to feathers—the sugar beet will make sugar equal to the cane—your sheep will clothe you in the winter. Why then plunge into debt? Our country is well adapted to agricultural purposes. It is true that the great disproportion in wages, between professional and agricultural labor, falls most heavily on the producing classes. If the farmer is crushed beneath the pressure, under which he now lies, the crash, if it comes, will react on the other classes, and all other interests will be buried in his ruin.

AGRICULTURE OF DODGE COUNTY.

Dodge Center, December 31st, 1851.

Dear Sir—Your favor of the 1st inst. was duly received; but other occupations have prevented an earlier reply. And my means for acquiring the information called for by your inquiries have not been such as to enable me to go into detail, but must be confined to generalities.

The soil of this county is well adapted to the growing of all the usual productions of the northern States. During the first few years after the settlement of this county, wheat was the principal crop, and yielded in abundance, and of the first quality; but the last two seasons have been unfavorable to wheat, the winters have been severe on the plant, succeeded by rust, which has ruined what escaped the severity of the winter. As summer crops, corn, oats and barley, are grown pretty extensively, the soil being well adapted to the growth of these grains, and the vicissitudes of our climate appear to affect them less fatally than the wheat crop, hence they are beginning to be looked upon by our farmers as the reliable grain crops upon which they must depend; and much less winter wheat is sown now than was sown a few years past. Spring wheat has been pretty generally substituted for winter wheat; but the distance from Milwaukee (that being the principal mart for our surplus,) and the low price of the article, renders it not a valuable crop for this section of the State.

When the county was first settled, the principal attention of the farmer was given to the raising of wheat; and a bad system was followed, that is, sowing wheat on the same ground for several years in succession. This seemed to be the result of necessity, in the first instance, in improving a new farm, rather than an approval of the course under different circumstances; but as the amount of land broke and put under cultivation has increased, they are enabled to commence a system of rotation, which, where it has been tested, has produced very satisfactory results.

A large portion of this county is probably as well, if not better, adapted to grazing than that of any equal area in any portion of the State. That portion of the county lying west of Rock River is mainly oak openings, and prairie interspersed with marsh land, producing an abundant supply of hay far beyond the wants of the county as yet. The upland yields an abundant supply of pasturage, whilst it is as yet left in the natural state; and experience has shown, that after a few years cultivation the soil becomes suited to the growth of English grasses. That portion of the county lying east of Rock River is heavily covered with timber, which after it is removed by the labor of the farmer, the soil is found to produce all the grain crops, with equal abundance, as in the other parts of the county; and although there is generally an absence of those natural meadows that are so generally interspersed through the openings and prairies, yet the soil appears to be more naturally adapted to the growth of the cultivated grasses, and I think will be found, when brought under cultivation, well adapted to the raising of grain, or to grazing.

So sensible are our farmers of the adaptation of our county to the raising of stock and wool, that they are changing their system and embarking in its different branches as fast as their circumstances will admit. I have no means of ascertaining the number, nor no data by which I might arrive at any thing like a certainty, as to the increase of sheep and cattle in this county during the past season; but it must have been very considerable, as very many droves have been driven here from the south, and sold or disposed of in some way among the farming community.

There has been some attention paid during the past season to the cultivation of flax; but from the extreme wet season, I understand it was not as successful as with a different season there is every reason to suppose it would have been. The abundance of rain during the past summer was detrimental to many of our summer crops; the great abundance prevented the planting of corn in season for its proper maturity, and whilst small, the wet hindered the growth of the plant, and produced at the same time a rapid growth of weeds which it was about impossible to destroy. Much of the hedge-row wheat sown last spring was destroyed by the blight in the head, which is supposed in some way to be caused by the great quantity of rain which fell during its growth.

The potatoe crop, which is usually very abundant, has been almost a total failure for the past season. Experience has shown that our soil is one of vast productive energy, subject however to the influences of the climate, which the past two seasons have shown is susceptible of very great extremes, which affect materially the prospect of the farmer who devotes his attention mainly to the raising of grain. The opinion seems to be generally entertained by those who have engaged in the business, that other systems of farming, particularly stock

and wool growing, if not more profitable in ordinary seasons, will be less likely to be injuriously effected when such extremes do occur.

Respectfully yours,

To Albert C. Ingham, Esq. HIRAM BARBER.
Sec. of the Wis. State Agr. Society.

AGRICULTURE OF FOND DU LAC COUNTY.

Ceresco, December 8th, 1851.

Dear Sir—Your letter of December 1st, asking for agricultural statistics of the county of Fond du Lac for publication in your annual report, came duly to hand, and I cheerfully forward you such as I deem useful from my limited resources. I shall confine my remarks to the west part of our county, comprising nine townships, which in soil and surface differs materially from the eastern townships. Nature seems to have indicated a difference by extending the bed of Lake Winnebago southward, in part dividing us on the borders of the timber and prairie.

Our western portion is mostly diversified, prairie and openings, dry rolling lands, as well adapted to agriculture as any in the State. It has several small groves of forest timber, but as a whole, is not well timbered. It is well and sufficiently watered, mostly by springs, brooks, and small rapid streams of pure water; the largest of which are a branch of Rock River, passing through Spring Valley and Waupun—the two branches of the Fond du Lac stream, one passing south-easterly, and thence north through Lamartin and Oakfield, and the other easterly through Rosendale and Eldorado—and Chrystal Creek, (or the Green Lake inlet,) passing north-westerly through Ceresco, affording the best water-powers in the county—and Grand River, running south-westerly through Metomon. Six of the nine towns have already water-powers improved. The soil is an argillaceous loam moderately mixed with sand and lime, and resting on a thin layer of mountain lime stone much broken and occasionally interspersed with knobs of drift gravel; underlaying the whole is red sand stone, which occasionally crops out in the ravines. On a few of the highest points of the Prairie, mostly in Ceresco and Metomon, the lime stone comes to the surface; and in some of the higher points in the openings the drift appears at the surface. This portion of the county can date the commencement of its settlement in 1844–5, there being only Seymour Wilcox, Peter V. Sang, and two or three other persons on the tract previous to that time. In the spring of 1844, the settlement

of Ceresco was commenced by an association or joint stock company; and in the same, and succeeding season, settlements were commenced in the other towns; since which they have rapidly improved, and yet there is abundant room for good practical farmers. Most of the farmers are natives of New England and New York, and have adopted mostly the eastern mode of cultivation. Of the various grains, our past experience would indicate Indian corn as occupying the first rank; in seven seasons, six have given good crops yielding from forty to eighty bushels per acre, and averaging about fifty bushels to the acre. Oats would, perhaps, come next in order as the crop never fails to grow, and yields well, in most cases ranging from thirty to seventy bushels per acre; but the straw is often too weak for the head. And one season (1849) the crop was much injured by a worm which attacked it in swarms, twining up the straw and heads before the crop was ripe. This singular phenomena was to me entirely new, and is now nearly forgotten except by those who suffered mostly by them.

The Oat Crop is not esteemed as highly as the maize, in consequence of its limited use, and as its price usually ranges lower; corn ranging from twenty-five cents to fifty cents per bushel, and oats from fifteen to forty cents per bushel, for the last five years. Barley has not been much raised, but has yielded well when tried, and finds a ready market at from twenty-five cents to fifty cents per bushel. Flax has only been tried for experiment, and never fails to do well, and many believe it will soon be ranked among our most important crops.

Wheat, which many suppose to stand first among our cereals, has been relied on by most of our farmers as their principal crop, until the partial failure for several years has called their attention to other crops. In the harvest of 1845–6, winter wheat yielded about half a crop, say from ten to fifteen bushels per acre; 1847 turned out a great yield, from thirty to forty bushels per acre. The Wisconsin Phalanx in Ceresco that year harvested twelve thousand bushels from three hundred and ninety acres of land; and this was not above but rather below the average in the district. In 1848 the crop was small, say about fifteen bushels per acre; in 1849 a little better, coming up to perhaps twenty bushels per acre; in 1850 and 1851 almost a total failure. Several varieties have been tried with no settled preference for any one; in good seasons all do well, and in poor seasons all fail about alike. The failure is by no means attributable to the soil, but to our winters, which have been cold and dry, with light snows soon gone, and frequent thaws; the ground does not heave, but the root seems rather to die from constant freezing and thawing. Spring wheat has yielded better, but is not so much esteemed as a crop. The last two seasons this too has suffered, or at least some varieties, (the hedge-row most,) from what the farmers call rot. Spring wheat may be estimated to yield, on an average for the last six years, one-third more

per acre than winter—not counting the large fields of winter wheat ploughed up and never harvested—and it will usually average ten cents per bushel less in our market.

Our soils seem well adapted to a luxurious growth of straw, and are not wanting in ingredients to form the berry—all other obstacles can be overcome by our farmers; when sufficient attention s given to the subject, they will doubtless find some variety which their skill can carry safely through our winters, and thus make winter wheat one of our most important crops. Of spring wheat many expect more, but I expect less.

Our markets for Grain have thus far been found in the immigration and rapidly increasing towns along the Fox, Wolf, and Wisconsin Rivers, and in the lumbering regions of the two latter, and their tributaries. Such has been the system of barter that it would be difficult to say what has been the price. As soon after this time as a good crop of wheat is received, it will have to seek an Eastern market, and thus establish a market price for us on the Fox River; which river must make our shipping channel for produce.

Of our other agricultural products, Wool ranks first. Every experiment at keeping sheep in our district has been successful. They winter well and do well in summer; wolves are not troublesome; and disorders have scarcely appeared. There are several good flocks in our district; one in Ceresco, belonging to Russell Smith, which may be taken as an example. In 1851 his flock consisted of 350 sheep—clip, three pounds of wool per head; and sold at home at thirty-eight cents per pound at the time of shearing. Our district is yet too newly settled for much attention to be turned to wool-growing or stock-raising. Of stock, the district is not yet supplied—hence none are raised for a foreign market; but our lands are well adapted to grazing, and the raising of horses, mules, and neat cattle.

For Butter and Cheese no part of the West is more favorable. Butter is packed here to a considerable extent, and finds the same market as our grains, ranging usually from ten to twenty-five cents per pound. I will give one instance only:—A neighbor of mine, Mr. H. W. Walcott, of Rosendale, packed six hundred pounds from four cows, and used both milk and butter for a family of three persons from the same cows; he sold at twelve and a half cents per pound—the cows have had no extra feed or care.

Pork, which is no favorite of mine, should have its place next; it is raised to some extent for the lumber market, but is not packed for an Eastern market. It usually brings, at the time of slaughtering, from three cents to five cents per pound, and helps to turn the corn crop into cash or other necessaries. Hogs thrive well on our burr oak and white oak acorns, and will eat the black oak; there are, however, not enough in our district to do more than fairly start and fit them for shutting up to fatten—corn is the principal fattening food.

Of the Root Crops, potatoes rank foremost; our soil seems well adapted to their growth, but cannot save them from the rot—hence the crop is not raised much except for family use. There has not been much variation in the crop during the past six years; new or sod ground is said to rot least, and to yield the least and best potatoes; and the sandiest places yield better than clayey. Carrots yield abundantly and are raised to feed. Ruta baga and flat turnips usually yield more—these are harvested, except by turning in stock to harvest for themselves.

Of Fruit Trees nothing can yet be said, except that young trees look and grow remarkably well. A large Nursery of Messrs. Wright and Baker, in Ceresco, is in excellent condition, and looks as well as any of its age with which I have been acquainted in the East. Peach trees have usually killed in winter, but have escaped for the two past seasons; apples, cherries, (common kinds,) and plums, fare better; and our wild plums, crab apples, gooseberries, and currants, indicate a fruit country.

Our farmers have had their attention called of late to deep ploughing, as favorable to the production of grasses and grains, the former of which has hardly been commenced yet. The best of the farmers are talking of ploughing deeper—result not yet known. Much is also said about turning attention to fruit-raising, but the want of convenient and comfortable buildings as yet prevents much time or means being given to accomplish that object. Much is also said of wool and stock raising, and abandoning wheat as a staple and reliable crop, and doubtless many will try the change and do well in raising wool and stock; but I anticipate a favorable change in raising winter wheat, and am still confident it will, for many years to come, be among our most successful and important crops.

With my best wishes for the prosperity of your Society, and my kind regards to yourself,

I am, yours truly,

To Albert C. Ingham, Esq. WARREN CHASE.

Sec. of the Wis. State Agr. Society.

AGRICULTURE OF GREEN COUNTY.

Exeter, December 30th, 1851.

Dear Sir—I have to acknowledge the receipt of yours of 1st instant, asking for information upon the agricultural condition of Green county; with pleasure I offer you the following remarks: Green County was first settled in the year 1831, but for many years the settlement was very slow, in consequence of its

distance from the markets. For the last six years its progress has, however, been quite rapid, and it has now a population of about ten thousand. It is situated upon the southern boundary of the State, and is bounded on the north by Dane county, on the east by Rock county, on the south by the State of Illinois, and on the west by La Fayette county. It contains sixteen townships of land, covering an area of about five hundred and seventy-six square miles, but little of which comparatively is waste land. The surface is somewhat broken, not hilly, but forming gentle slopes and undulations, nearly all susceptible of cultivation. It is well watered by the Sugar River and its numerous tributaries, and also by the Pecatonica which passes through its south-western portion.

The soil differs in the northern and southern portions of the county. In the north it is generally a sandy loam and very productive, while in the south it is mostly prairie, with a clay subsoil. Most of the crops usually raised do well; the average yield of wheat being twenty-five bushels per acre—corn usually averages fifty bushels—oats fifty bushels—barley forty bushels—and potatoes two hundred bushels to the acre.

The manner of cultivation does not differ materially from that practised in the East. Its greatest defect is the want of attention, farmers being too much disposed to hurry over a great number of acres rather than to cultivate a few, and those few acres cultivate well. Deeper ploughing, no doubt, is advisable, together with a more general use of the harrow, and roller. Small grains should be covered deeper than at present.

Our markets as yet are distant, but they are good in prospect. Janesville, it is expected, will soon become the market for the nothern part of the county, and Freeport, Illinois, the market for the southern portion.

In Stock we have an abundance, though but little of the improved blood. Some half-blood Durham cattle have been brought among us which will, without doubt, be of benefit. Our horses are of an excellent kind, although I am not acquainted with their origin.

The county is well adapted to Grazing, being well watered and properly interspersed with meadow prairie and timbered lands. There is much heavily timbered land in the southern portion of the county.

Dairying and Horticulture have as yet received but little attention, although our soil is well adapted to either.

Monroe, the county seat, is a flourishing town of about one thousand inhabitants. Nearly all of the mechanical arts are carried on in the village, and a large steam flouring mill, in successful operation, adds much to its facilities.

Decatur, Albany, Attica, Dayton, Bellville, all are flourishing towns, though some of them are as yet in their infancy. Belville, situated upon the Sugar River, presents great facilities for manufacturing operations.

Exeter, situated near the Sugar River, is a mining town of some importance. New Glaris, a German town, and Monticello, also present favorable openings.

With the warmest wishes for the prosperity of your Society, and the advancement of the agricultural interests of the State,

I am, yours truly,

T. J. SAFFORD.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

AGRICULTURE OF JEFFERSON COUNTY.

Aztalan, December 30th, 1851.

Dear Sir—I will endeavor to comply, in part at least, with the request expressed in your letter. By way of preface, allow me to say that I have not been much engaged in farming generally; but have occupied myself in fruit growing for the past few years, which fact qualifies me better for giving a correct account of the capacities of the soil of our county for fruits, than for other crops of the farmer. I must therefore be excused if more space is given to the former, and less to the latter than would otherwise be expected.

Jefferson County comprises an area of twenty-four miles square, and is divided into two parts from north to south by Rock River. I shall describe that portion lying west of the Rock and Crawfish Rivers together for convenience, as it presents nearly the same general characteristics, and differs materially from another portion of the county lying east of these rivers.

The surface of the country west of those rivers is generally covered with oak openings, with a small portion of prairie, and a larger portion occupied by marshes, or natural wet meadows. The upland is generally wooded with white, burr, and black or red oaks; with a soil varying with the vegetation found upon it, in a state of nature.

Much of this tract is underlaid with a bed of lime rock, resting upon sandstone, at a depth of about forty-five feet, as is proved by piercing it for wells.

The prairies have an alluvial surface soil of great depth, from eight inches to two feet, with a clay subsoil slightly mixed with sand and lime pebbles.

The marshes possess an alluvial soil of great depth, varying from two to ten feet, composed of vegetation in different stages of decomposition, and are underlaid generally with a strata of fine washed beach sand, overlaying clay or rock.

Next in order I shall place the "burr oak openings," occupying a large portion of this region, and the south-eastern portion of the county, bounded on the

north by Bark River. These are characterized by a dark alluvial surface soil, mixed with sand and varying to quite sandy, the substratum less tenacious than that of the prairies, and varying to gravelly clay, and rarely to sand and gravel.

Next, the black or red oak openings, surface sandy loam; tenacious subsoil, varying to sandy.

White oak openings, generally occupying the most elevated portions west of Rock, and south of Bark Rivers; soil tenacious, like the subsoil of the prairies.

The burr oak lands south of Bark and near Rock River, are more sandy than those above described, and are pretty freely sprinkled with granite boulders in different places.

East of Rock and north of Bark River, the soil is generally sandy, or clay loam covered with leaf mould, with all the variety of subsoil described above, interspersed with marshes and tamarack or larch swamps; easily susceptible of improvement by ditching, and seeding with timothy or red-top. The upland was orignally nearly all covered with a dense growth of miscellaneous timber, including the sugar maple, from which nearly all the sugar is made used in that portion of the county. The same description answers for the larger portion of the tract lying between the Rock and Crawfish Rivers. The sub-strata is generally composed of less compact materials than other portions, giving the roots of grasses access to the subsoil.

The general practice of our farmers has been to crop our uplands with wheat, corn and oats; wheat being the principal crop relied on for market.

The prairie and burr oak lands, as a general rule, have proved best for corn; the white oak for wheat; the timbered and marsh lands for the grasses. Clover has been successfully grown in favorable seasons on the prairies and more compact soils, but will doubtless prove more reliable on the more light and sandy portions and the timbered lands.

Oats has been a heavy crop in all parts of the county the past year. This crop has generally, except in our driest summers, been good. Spring wheat has generally been a fair crop. Winter wheat has proved a failure more or less for the last four or five years; previous to that time the crop was generally a heavy one, and of fine quality. The failure is mostly attributed to want of snow, and dryness of the winters. This cause has doubtless operated to produce the result; but it is not, in my opinion, the only cause, if it is the chief one. The continual cropping in succession with wheat has done more to produce the disastrous results which have of late been generally experienced. Covering a portion of any field with a coating of straw would prevent winter-killing, and cause as good crops as formerly, if the latter cause has not had effect.

The substitution of sheep husbandry for exclusive wheat-growing, will doubtless be found profitable on our best grass lands, if not in every part of the

county. Enough of marsh, to produce the hay for wintering, may be found convenient in nearly all cases.

Stock-growing, for dairy purposes, I think has been found profitable in all cases where proper attention has been given to the selection of animals, and proper provision made for their care and feed. The root crops, used for feeding, grow luxuriously with deep and clean culture, and produce bountifully on all our dry lands not over-cropped.

Some few have already moved towards an improvement in this respect; and more would do so if the means were at command. At the furthest, it can be but a few years before this county will export some wool, and may be able to fill some small orders for butter and cheese. Corn is generally a fair crop, never having been an entire failure, and but two or three times a light crop since the county was settled. Still it may be questioned whether we can successfully compete with our Southern neighbors in the article of pork, except when prices range high as at present. I have practised feeding corn to milch cows in the winter for the last two years with success. I had been previously under the impression that such dry, hard feed, would not produce milk, but rather, by producing fat, dry the animal. This, I am satisfied, is not true; but am not prepared at the present time to say that corn is more economically produced for feeding cows than root crops, but think the practice worthy of further trial.

All of our soils, except those too wet, are adapted to the culture of the apple; and those which are too flat may be rendered dry enough for that fruit by ridging with the plough, continuing the operation until the ridges for the trees to stand upon, are some eighteen inches higher than the dead furrows between the rows.

The subject of fruit culture has received but little attention except at the hands of a very few individuals until within the last five years. In the early settlement of the county, all the energies and means of the emigrants were required to obtain the necessaries of life, and to buy what was regarded the necessary amount of land for a farm. Added to this, the nearest trees were at a great distance, and to procure them, long unsettled prairies, with almost impassable roads, must first be traversed. The few who brought seeds and planted them, for want of experience in the matter, saw their young trees fall a prey to the first cold day in winter, or to the numerous gnawing animals which had hitherto flourished and multiplied on the abundant supply of nuts annually gathered from our forest trees. A few survived, and the owners have been rewarded with an annual supply of as good fruit as could be expected from seedling trees.

Some of these trees with which I am acquainted, have the past year produced their sixth annual crop, all full except the last. Within the last eight or nine years nurseries of choice varieties have sprung up in our midst; trees from which

have borne fruit for three or four years past. Some old Eastern favorites have not proved equal to their character East; while others only second rate there, have produced fruit of surpassing beauty and excellence. Some varieties from the South which are unknown East, have been of the latter character. The Rhode Island Greening, Roxbury Russet, and Newtown Pippin, are among those which have not given satisfaction. While the Rambo, Yellow Belleflower, White Belleflower, and Wine Apple, are among those which appear to have improved by emigration.

The writer has become convinced, from six years almost exclusive attention to growing trees, and studying our soil and climate with reference to the subject, that from the centre of Illinois to 44 or 45 degrees latitude in Wisconsin, we have as fine a region for profitable orcharding as can be found anywhere. In central Illinois trees grow faster and produce higher-colored specimens than here; but the crop is more liable to be cut off entirely from spring frosts than in our latitude. While they can grow some larger specimens than we can, ours of the same varieties will keep the longest, which will give us the advantage in supplying the Southern markets with long keepers; and, at the same time, our proximity to the Northern pineries and mines will give us the advantage of the market in that quarter. Of the pear and cherry nothing very flattering can be said at present. I have seen pears growing in this county for the past two seasons, and some as fine specimens as are raised any where of the same varieties; but we have some serious drawbacks to contend with, only a limited number of varieties have withstood our severest winters. While the "fire blight," the fatal malady of the pear tree, has sent its premonitory symptoms (the leaf blight) among us. The greatest difficulty seems to be with young trees in the nursery. If we can manage to get up a good supply of the right size for transplanting they will probably do well on our driest, lightest, and less clayey soils. I have trees in sandy loam, with a pervious subsoil, which are very flourishing. Of cherries, the Heart or sweet varieties, embracing the Heart and Biggareau classes, none have borne fruit in our county, or in the State, within my knowledge, except in a few instances, and those near the Lake shore.

Further trials in poor soils, with neglected culture, may meet with success. The acid cherries, Duke and Morello classes, embracing the common pie cherries, do as well with us as could be wished.

Plums are promising on our heaviest soils, with a compact subsoil, not too rich nor too dry. Many varieties are tender with us; but we have enough of known hardy sorts, of good quality, to do us very well. I consider a clay soil, or clay subsoil, indispensable for the plum. In the rich prairie soils of Illinois their culture is nearly abandoned.

Will peaches do anything in Wisconsin? is a question often asked. They will

do something; but whether they will bear enough of fruit in ten years to make their culture profitable is a question upon which we have not sufficient data to warrant a reply. Trees have borne here four successive crops, and winter-killed the winter following the last one. If I had a spot of pretty high ground (not rich) sloping to the east, and perfectly protected on the west from cold winds, I should plant an orchard with the expectation of having fruit once in two or three years. The peach-worm should be looked for in the trunks, at the surface of the ground, several times every summer, and after they are dug out and destroyed, some ashes should be placed around the tree.

The grape does well with me. I have had the third successive crop of Isabellas the last season from a vine seven years old, standing in deep, rich sandy loam; others, who have planted in stiff clay, have not been equally successful. The grape seems not to relish a compact soil. The vines should have some protection by laying down and covering with straw or litter the first four or five winters, after which they will do without. My Isabellas have been very fine except the crop of last season, which did not perfect its flavor for want of sufficient sunshine. In ordinary seasons they ripen from the 1st to the 15th of September. The Catawba is two weeks later in ripening; it has not yet fruited with me. I suppose it will not perfect its fruit except in favorable seasons in this latitude. I have fruited another variety, inferior to the above, the two past seasons; it ripens two weeks earlier than the Isabella—is as hardy as our wild grape, and a rampant grower.

Strawberries do very well with me, producing good crops every year, with moderate culture. The large Early Scarlet is the best variety tried here. Hovey's Seedling proves rather unproductive.

All fruits, except Heart cherries and the peach, should have a good deep soil, and clean culture until the middle of August. To let trees struggle up among grass and weeds is to throw away the money bestowed upon their planting. Orchards planted on high grounds produce a good crop when the frost kills all the fruit in low grounds. The most elevated sites should be chosen on that account, according to my experience.

Too much can hardly be said against the slovenly manner in which trees are often placed in the ground, and cared for afterward. Many seem to suppose that to get a fine lot of large trees from the Nursery which have made a tall, slender growth, to get their roots in the ground by preparing a hole just large enough to receive them by crowding—and then to keep them trimmed up to such a height as will admit the free passage of a tall horse under the branches without brushing his ears—is all that is necessary to secure, in time, a good bearing orchard. The trees must not interfere with the growth of other crops, a full crop of wheat or oats is expected to grow among them: to effect which the ground must be

ploughed close up to the trees. Some of them get bruised and barked, and others broken down by the team; to avoid which the land is seeded to grass. Continued cropping has exhausted the soil, the meadow renders it dry and compact—the trees begin to look *sorry*, and some die—when the owner gravely concludes that "this is no fruit country," the cattle are turned in, and he is soon rid of his unsightly orchard.

Trees for transplanting in orchards should not be very large. Thrifty trees three or four years from the graft are safest. (The writer has had the best success with those but two or three years old.) Some set out at two years growth, from root graft the spring of 1847, have borne fruit the two past seasons. One of them has borne its third crop. All of them have made rapid strong growth, and are now large enough to bear from a peck to a bushel each. They should be taken up carefully with as many roots as possible. If they are to be out of the ground more than a few hours, the roots should be coated with mud (grouted); they now require a pretty severe pruning to restore a balance between the top and shortened roots. When arrived at the place of planting, the roots should be covered with earth to prevent further drying. This done, you are now ready to set out. If the places are not already prepared, that must now be done by taking out and removing the subsoil to the depth of at least eighteen inches, and not less than two feet each way from the point where the tree is to stand, the surface soil removed may now be replaced in the bottom of the hole thus made, filling it half, or two-thirds full. Now set the tree in the center, and fill the space around the tree with rich surface or alluvial soil, filling the outside of the space around the tree until the roots are nearly covered—then dash among the roots a pail of water—fill immediately to the level of the surrounding surface—now walk around the tree pressing down the soil, not stamping—throw on three or four inches more of alluvial over the whole space, and the work is done.

After-culture must be attended to by those who expect to raise a good orchard, why should not a crop of apple trees receive the same attention as any other crop? Corn, perhaps, has no equal as a crop in the young orchard. Each tree should be allowed to fill the space of one hill of corn. East, potatoes and root crops are recommended; trees there need all the sun they can get—hence the practice. Here we have often too much burning hot sun, especially in July and August, causing "bark blight" on the naked trunks of young trees, which often destroys them the first year or two after planting. This evil may be avoided without the shade given by the corn crop, after the second year, if the trees are let alone, that is, not trimmed up.

But how can we hope to induce farmers to cease trimming up their young trees at once; a system of operations so contrary to all their pre-education and practice on the subject, can hardly be expected to meet with their approbation,

We will be content at the present time to meet about half way, and will agree if you do not like our practice after trying it, to submit to the practice of the old way without grumbling. Now, to our practice. Let the young trees have their own way after being well set; they will throw out branches near the ground to furnish them elaborated juices for the formation of new wood and roots preparatory to making a free growth. The leaves performing the same office for the tree that lungs do in the animal economy; and as the animal cannot flourish without healthy strong lungs, neither can the tree. The young tree will throw out these new branches, covered with lungs, just where they are needed to shade the trunk from the burning rays of our summer sun. Crop them off, and the vital energy of the tree is weakened; continue the operation, it becomes sickly, and if death does not ensue, the trunk does not grow for want of nourishment; a disproportionate quantity of leaves will gather in the top, overloading that part, the trunk becomes permanently bent, and the symmetry of your tree is destroyed. A multitude of facts, bearing upon this theory, may be gleaned in almost any part of our country where the planting of young orchards has been commenced.

Two trees can be shown in our grounds of the same variety, and of the same size when set in the spring of 1847; one, allowed to have its own way, formed its head two or two and a-half feet from the ground, and has borne two crops of apples, and has at this time enough of branches, and of a proper size, to support a bushel of fruit. The other, set in the same row, only eighteen feet distant, topped at six feet from the ground, has had the same culture and attention, but has not yet borne an apple, and has not more than half the top to support a crop as the other. The low-headed tree has decidedly the advantage in contests with our strong winds, and comes off unscathed, while the high-topped one is swayed about, bent, and has its roots loosened, if not broken, by the increased lever-power given to the wind by its long trunk. Young trees in my nursery generally make a stronger growth, and invariably have more roots, when allowed to have nearly their own way, than when the old system of trimming up is applied to them.

The object of having the ground mellow and loose at the surface around young orchard trees, is mainly to prevent the evaporation of moisture. A still greater benefit may be conferred by keeping around them straw manure and other litter during the summer; and even in winter if a small mound or hillock of earth was thrown around the stem in November, it would prevent the attacks of mice, and support the tree during winter storms.

The spring after setting out, in May or June, those trees which have made a good growth may be trimmed some within a foot of the ground; and within two or three years, if good cultivation is kept up, the required height may be

given to the heads; but we must here repeat let that required height be as low as possible.

The seeming difficulty of working around and under low-headed trees vanishes, as the plan is executed. They will throw their branches upward, presenting the shape and symmetry of a spread fan. Roots and top being brought within hailing distance, they seem to vie with each other in their growth, producing the most well proportioned, strong growing, healthy orchard tree that can be imagined, in the shortest possible time. The writer is well acquainted with instances where the quantity of fruit borne on low heads was twice that of high topped ones of the same variety, standing side by side, and with the same treatment, the difference continuing after the trees had become well grown, and had borne several crops.

High topped trees will frequently throw their branches downwards, and fill the space prepared by the owner for the passage of his team, forming an umbrella with the eaves near the ground. This is an effort of nature to supply shade to the naked trunk of the tree from the burning rays of the sun; an effort which would not have been put forth, had the tree been allowed to furnish that shade by producing branches near the ground.

I have yet to find a man who has tried low heads who is dissatisfied with them, or who could be persuaded to abandon the practice for the old one.

Yours very truly,

To Albert C. Ingham, Esq. J. C. BRAYTON.

Sec. of the Wis. State Agr. Society.

AGRICULTURE OF KENOSHA COUNTY.

Somers, December 30th, 1851.

Dear Sir—Yours, of December 27th, was received this evening, soliciting information upon the agricultural condition of the county of Kenosha, and I regret exceedingly that the duty has devolved upon one so incapable of furnishing correct information upon the various subjects embraced in your communication; but I will proceed, without further apology, to answer your inquiries to the best of my knowledge.

The history of Kenosha county, I presume is pretty generally known, especially in Wisconsin; it was formerly a part of Racine county, and was incorporated into a separate county at the session of 1850. It comprises the city of Kenosha, and the towns of Southport, (being the fractional parts of two townships bordering upon Lake Michigan,) Pleasant Prairie, Somers, Paris, Bristol,

Salem, Wheatland, and Brighton; being about twenty-five miles in length east and west on the south line, and about nineteen miles on the north line by twelve miles in width. It is bounded on the south by Illinois, on the east by Lake Michigan, on the north by Racine county, and on the west by the county of Walworth. If I am not mistaken the first settlement was made in 1836, by the Oswego Emigration Company; the population in 1850 was nearly 11,000—the exact number I do not now recollect. The face of the country is sufficiently undulating to give a good drainage to the surface water, but not hilly. The eastern part of the county is mostly prairie, interspersed occasionally with small groves of timber. In the vicinity of Pike Creek and bordering on the Lake, there is quite a large tract of heavy timber, tall and thrifty, consisting of different kinds of oak, hickory, maple, black walnut, elm, basswood, black and white ash, iron wood, &c. The western portion of the county consists more of oak openings or barrens, as it is generally called, interspersed with several beautiful lakes, which abound with fish of various kinds. Our county is watered by Fox River, the two branches of the Aux Plains, and the two branches of Pike Creek, with some few smaller streams which afford water the most of the year. I am unable to state the number of acres of tillable land, but from my limited knowledge of the county at large, I can say that there is but a very small proportion of the county unfit for tillage, and I scarcely know of any but may be made good tillable land by a little drainage.

I hardly know how to describe the soil, not being a scientific man. The surface soil of the prairie is black, having the appearance of being formed of charcoal and ashes from the burning of the luxuriant and heavy growth of grass with which it abounds, together with the decayed vegetable matter which occasionally escapes the devouring element. The surface soil varies in depth from four to six or eight inches, when it seems to change to that of a lighter color, and more compact, and resembles a species of clay mixed with fine sand and limestone pebbles, and after being ploughed a few years to the depth of eight inches or more, it becomes of a chocolate color; and the greater the depth of ploughing, the more abundant are the crops of all kinds.

This county is well adapted to the growing of all kinds of crops which are grown in the western country. Wheat has hitherto been the staple commodity, but has partially failed for the last three years; the average yield was about twenty bushels per acre. Corn, oats, barley, and the different grasses, flourish when the ground has been properly prepared. Clover and Timothy yield an abundant crop on land which has been thoroughly subdued, and manured before, or at the time of seeding; but whenever an attempt has been made to grow tame grass of any kind, except Red top, on land which has not been well subdued, it has proved a failure—hence the idea which prevails in many places at the East, and in some

parts of Wisconsin and Illinois, that the tame grasses will not flourish in this State. Kenosha county, and especially the eastern portion thereof, is perhaps as well adapted for grazing as any county in the State; and our farmers are generally turning their attention to the growing of stock and wool. There are some very fine cattle owned in this county, of the native and Durham breeds, but the number is small when compared with the whole number owned in the county; but a spirit of improvement has been awakened among the farmers generally, and at our last county Fair there were some very fine animals exhibited, which would compare favorably with most Eastern Fairs.

The wool-growing business seems to be the special order of the day among our most enterprising farmers, and there are many excellent flocks of the different breeds of sheep, particularly of the Merino and Saxon; but our sheep, as well as our cattle, are susceptible of improvement, and each year I trust will show that wool-growing, in Kenosha county, is receiving that attention which its importance demands.

I cannot state the number of sheep or neat cattle in this county; but there are one or more flocks of sheep numbering over one thousand, and quite a respectable number ranging from three to seven or eight hundred.

There are some very respectable dairies in this county; and this branch of industry is becoming a favorite among many of our farmers. It is steadily increasing, and there is no doubt but that it will prove a money making business, there being no reason why Wisconsin should not become a cheese-exporting, instead of a cheese-importing State—situated contiguous to the Lake—having a market close at hand, and a choice of markets from Chicago to Milwaukee—having a soil unsurpassed for richness, and well adapted for grazing and tillage, and an atmosphere untainted by stagnant water, or miasma of any description, as healthy as any part of the world—I know of no good reason why Kenosha County should not rank among the first counties of the State; and if it should prove otherwise, it will not be on account of any defect in soil, climate, or locality, but it must be the result of negligence among the people.

Not having the necessary statistics at hand, I trust you will excuse me for not stating many things, such, for instance, as the number of acres of tillable land, the number of neat cattle, sheep, &c., in a more definite manner.

Permit me to congratulate you upon the success which has attended the formation of the State Agricultural Society.

Most respectfully and truly, your friend,

HENRY JOHNSON.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

AGRICULTURE OF MANITOWOC COUNTY.

MADISON, WISCONSIN, Feb. 12th, 1852.

DEAR SIR—Your communication of a recent date making inquiries about Manitowoc County, came duly to hand, and contents noticed. In reply, I regret the shortness of the time mentioned will prevent my writing home, and making inquiry of some of our older settlers, farmers, business men, &c., for the purpose of obtaining information in answer to your various inquiries in relation to our county. It is hardly to be expected any one individual could possess information in detail upon all of these points; but delay being impracticable, I will proceed to answer your inquiries as correctly as my knowledge will permit.

I think the county was first settled in 1835. About that time the attention of capitalists and speculators was attracted to Manitowoc and Two Rivers, as bidding fair to become points of business and commercial importance. The valley of the Manitowoc river extending west through the center of the county, and nearly to Lake Winnebago, also attracted attention as being the shortest and easiest outlet for a large portion of the travel, produce, and business of the Lake Winnebago and upper Fox River County. Towns were then laid out at Manitowoc, Two Rivers, and Manitowoc Rapids; and on or about the year 1836, several mills for the manufacture of pine lumber were erected in various parts of the county. Our population, however, did not exceed a few hundred up to the year 1847, most of whom were engaged in lumbering. Since that time the county has had a gradual influx of immigrants mostly from the various European States, and of a class well calculated to reclaim the country. By the last census we are put down at 3,768 inhabitants; and there can be no doubt but that we number at the present time over 5,000 inhabitants, of which about 1,000 reside in the village of Manitowoc.

The county is bounded on the north by Door and Brown, on the west by Calumet, on the south by Sheboygan, and easterly by Lake Michigan, containing thirteen full townships, and eight fractional ones, which may be safely reckoned as equal to four full ones, making in all an area of about 600 square miles. About four-fifths of the whole surface is susceptible of cultivation.

In general formation it is moderately undulating, and in some parts very agreeably diversified with hills and valleys. There is a very abundant supply of excellent water. It would be difficult to find many quarter sections in the whole county that are not watered by a choice and durable spring, a creek, or river. The south branch of the Manitowoc rises near the south and the north branch, near the north end of Lake Winnebago, and the two unite near the west line of the county. From the junction, the river, which is the largest in the

county, runs easterly through the entire of the county, and empties into Lake Michigan at Manitowoc. Aside from the obstruction of a small sand bar at the mouth of this river, it is navigable nearly to Manitowoc Rapids, a distance of more than three miles by its course; and at a comparatively small expense it might be improved and made navigable to within three miles of Lake Winnebago.

Vessels, carrying from seventy-five to one hundred thousand feet of lumber, have generally run into the river, loaded their holds full, and passed out without difficulty; and crafts, taking forty to fifty thousand feet, have generally put on a full load and gone over the bar without striking. The depth of the water on the bar for several years past, has been an average of about six feet; the average depth of water inside is about fifteen feet, extending nearly to Manitowoc Rapids.

The point, at the mouth of the Manitowoc River, lying nearly equidistant from Milwaukee and the Islands, is one of national importance as regards the interest of the commerce on the Lakes; and it is admitted by nautical men of the first judgment, to be the best natural point for a harbor between Chicago and Bailey's Harbor. It is estimated that an appropriation of 20,000 or 30,000 dollars judiciously expended, would make it safe and easy of access, at all times, to all vessels navigating the lakes. The Twin Rivers are next in size to the Manitowoc; and taken together, are not much inferior on the score of natural advantages. There are numerous other streams of some importance in various parts of the county, of which time and space forbid even a passing notice.

All our rivers and streams abound in numerous and valuable water powers, many of which are already improved by saw and grist mills. Our land is heavily timbered, and without prairie, except in a few small marshes.

The general character of the soil in the eastern portion bordering on Lake Michigan, and embracing about one-seventh of the whole extent, is black, sandy loam. The remaining six-seventh is clay and sand loam, well mixed with lime. The timber is bass-wood, different varieties of elm and maple, beech, oak, ash, pine, hickory, hemlock, birch, butter-nut, &c.

Our average yield per acre will be safely put down as follows: Potatoes, four hundred bushels; corn, fifty; oats, fifty; wheat, forty.

The manner of farming in all heavily timbered new countries must be very nearly the same. As yet the plough has been but little used. If defects exist in the modes of clearing and cultivation generally adopted by our farmers, it will require some one better posted up in practical farming than myself to point them out and name the remedy.

Our market facilities are good. The farmers have been able to sell all their surplus at home at Milwaukee and Chicago prices, with freight, pierage, dockage, drayage, and commission added. Owing to the large number of our citizens engaged in the lumbering business, our farmers have not been able to supply the demand.

Our cattle, horses, hogs, &c. have generally been bought in southern Wisconsin and northern Illinois, and are of the various breeds usually found in those places.

Our soil is well adapted to tillage and grazing, and will not suffer in the least by a comparison with western New York or any other place in this respect. Some of our farmers have already engaged to considerable extent in the dairy business, apparently with good success.

Horticulture and fruit-growing can, in all human probability, be carried on as successfully in this county as in any other place in the same latitude in the Union; and the subject has already begun to attract the attention of our farmers and citizens.

A densely timbered country is necessarily settled less rapidly than one which is more easily improved. But you may put it down as one of the established truths, that the hard timbered portions will eventually, and that ere long, become the wealthiest, most densely populated, and powerful.

The annual amount of our business is probably greater in proportion to our population than that of any other county. And in order to give you a more correct idea of the amount and nature of our business transactions, I append Tables of Imports and Exports of the villages of Manitowoc and Two Rivers during the past year.

COMMERCE OF MANITOWOC FOR 1851.

IMPORTS.		EXPORTS.	
3661 barrels flour	$10,983 00	4,825,000 feet lumber	$28,950 00
447 barrels pork	5,364 00	855,000 feet lath	2,565 00
74 barrels beef	444 00	275,000 pickets	1,650 00
558 barrels meal	1,116 00	15,467,000 shingles	27,068 00
855 barrels salt	1,082 00	8,700 cedar posts	348 00
65 barrels vinegar	195 00	750 cords shingle bolts	3,750 00
120 firkins butter	1,200 00	1,750 cords wood	2,625 00
7800 lbs. lard	536 00	75 cords tan bark	225 00
7 tons fresh pork	700 00	8,000 feet square timber	480 00
7000 lbs. mutton hams	210 00	1,190 bbls. white fish	5,950 00
135 bushels beans	201 00	36 bbls. cranberries	216 00
75 bushels lime	75 00	3 tons potash	360 00
55 bushels plaster	75 00	2 tons black salts	160 00
395 tons merchandize	73,750 00	2,500 lbs. maple sugar	250 00
Drugs and medicines	800 00	Furs and peltries	2,525 00
Total Imports	$106,721 00	Total Exports	$77,122 00

ARRIVALS AND DEPARTURES.

No. of Steamboats	374	Tonnage	203,100
No. of Sail Vessels	414	Tonnage	24,840
Total	788	Total	227,940

COMMERCE OF TWO RIVERS, FOR 1851.

IMPORTS.		EXPORTS.	
2,460 barrels flour	$9,840 00	9,535,469 ft. sawed lumber	$59,646 21
675 barrels pork	8,450 00	4,687,000 ft. lath	14,061 00
185 barrels beef	1,480 00	4,908,500 shingles	9,507 79
14,974 lbs. butter	1,497 40	837 cords shingle bolts	4,180 00
83 tons pressed hay	830 00	800 cedar posts	48 00
107 barrels corn meal	214 00	4,500 feet square timber	270 00
20 barrels water lime	45 00	329 cords tan bark	987 00
212 bushels barley	127 00	608 cords fire wood	912 00
1,462 barrels salt	2,558 50	2½ tons pot-ashes	300 00
8,000 lbs. sole and upper leather	1,727 17	2 tons dry saleratus	160 00
Hides, tallow, &c.	21,094 66	104 setts bed posts	208 00
Horses, oxen, &c.	2,175 00	6,478 packag. fish, ½ bls.	16,198 00
Amount of merchandize	45,655 55	PRODUCTION OF THE FISHERIES.	
Machinery, iron, bricks, &c.	19,316 20	3½ tons glue scraps	150 00
		43 bls. plastering hair	105 00
		3,200 lbs. wool, 16 sacks	1,280 00
		42 packages leather	4,750 40
Total Imports	$115,010 48	Total Exports	$112,763 40

In our imports it will be seen that we have imported largely for local improvements, which are to be permanent fixtures; such as tanning leather and manufacturing lumber. Deducting these amounts, and the balance of trade instead of being, as it now appears, against us, will be in our favor.

I am, very respectfully, yours,

E. RICKER,

Member of the Assembly for Manitowoc County.

To ALBERT C. INGHAM, Esq.

Sec. of the Wis. State Agr. Society.

AGRICULTURE OF OUTAGAMIE COUNTY.

Appleton, December 31st, 1851.

Dear Sir—In compliance with your request of the 15th inst., I have the honor to transmit the following as the best statistical information relative to Outagamie County which I have been able to procure in the very brief space which has elapsed since I received your communication.

In reply to your first question, I would say that a few scattered French families settled at various points on Fox River, in Outagamie County, at a very early date—how early is not precisely ascertained. About the year 1837, a Roman Catholic Mission was established at Little Chute, a point on Fox River, about twelve miles from Lake Winnebago; but no settlement of any importance has been made until within the last three years. In the month of February, 1849, a settlement was commenced on Fox River, seven miles from Lake Winnebago, on the present site of the village of Appleton, and since that time the population has increased so rapidly that the county now contains about four thousand souls. The settlers are mostly from New England and New York, and are an industrious and thrifty population of a good, moral, and religious character. The county was organized in 1851. The name was an unfortunate one, not the choice of the people—but future legislation, we hope, may remedy this difficulty.

The principal place of the business of the county is Appleton, in the township of Grand Chute, where is located the county seat. The villages of Lawesberg and Grand Chute lie on either side of Appleton. The village of Little Chute, five miles below, is inhabited almost entirely by French, Dutch and Germans. The village of Kaukana, nine miles below Appleton, and sixteen from Lake Winnebago, has risen into importance during the past year, principally stimulated by the extensive State works now in progress at that point. Hortonville is a village in the western part of the county, where a great deal of lumber is manufactured.

The general formation of the county is level. About twenty miles in length of the Fox River lies within this county; while the Wolf River runs with innumerable windings through the interior portion. The latter is navigable by steamboats far above any point in this county. For ten miles the Fox River in this county is not navigable, in its natural state, on account of the Rapids. The banks of the Fox River are high and steep—they are cut by heavy ravines which run back sometimes half a mile from the river. The land falls slightly as it recedes from the banks, making in some places a sort of swayle in which the ravines take their rise. After this the land rises again, until at a distance of a mile or so from the river it is dry and undulating. The whole country is well timbered; it may be said in general that it is covered with a heavy growth of

timber—maple, oak, ash, elm, and hickory. The exceptions to this general remark would be, the patches of openings which lie along the river at many points, (being most abundant in the northern part of the county,) and the magnificent and apparently inexhaustible pineries which extend along either bank of the Wolf River. The marshes found in many parts of the county, produce now a fine quality of grass, and are capable of very profitable cultivation, with emphatically but little expense for drainage.

Outagamie county is twenty four miles in length one way, by twenty seven miles in breadth the other way, containing 648 square miles. It is bounded on the north by Oconto county and the Indian Reservation, on the east by Manitowoc and Brown counties, on the south by Calumet and Winnebago counties, and on the west by Waupaca county. I have no doubt that six hundred square miles of good tillable land are to be found in this county.

As to its soils, and their constituent elements, there appears to be a bed of limestone rock underlying the whole county—upon this is a bed of red marl, generally about seventy feet deep, with occasionally a streak of blue clay, and very rarely a little hardpan. On the surface of the marl is from three to six inches of decayed vegetable matter, making a rich blue mould. The limestone is less apparent in the western part of the county, and the soil assumes on the surface a drier and lighter character, and of course is a very retentive and extensively productive soil.

The farmers have had barely time since taking possession of their land to bring it into condition to receive crops; and, so far, they have only succeeded in raising what was sufficient for their own use, and the partial supply of a limited though regular home market. A practical farmer who passed through the county during the summer of 1851, mentioned a forty-acre field of winter wheat, three miles west of Appleton, as by far the best he had seen in the course of a journey through the whole southern and western part of the State. Our agricultural existence has been so brief, that the science has as yet assumed no definite form; and there is not sufficient data to enable me to say anything more, than that all the common crops which have yet been tried here have succeeded beyond the expectation of the farmer. One piece of land which has been regularly planted for many years back by a half-breed family without receiving any kind of manure, now yields abundantly under the worst possible cultivation. The next two years, however, will show the capabilities of the county.

The most approved time for clearing land is during the summer months; and the first crop is generally put in without ploughing. Farmers generally have but limited means, and are compelled to get all they can out of their lands, with the least possible outlay, for the first two years.

The market for agricultural products is as yet entirely at home—nor is that

market fully supplied; but when productions increase beyond the capacity of the home market, they will find ready access to a foreign one. The Fox River Improvement, now in progress, will connect the county directly with the great Lakes; and fifty miles water carriage will bring the production of the county to the nearest depot of the Rock River Valley Union Railroad, by which they can reach Milwaukee and Chicago. The manufacturing villages which will naturally arise on such noble water-powers as are found in that part of Fox River which lies in this county, will always afford a steady and extensive home market, and any surplus will easily be shipped either north or south.

Our county is altogether too young to have attained much celebrity in the raising of stock. The stock in this part of the country is of a superior character, and a general desire is manifested to obtain good breeding animals.

Though, as before stated, all crops that have been tried here have succeeded well, yet the soil seems more expressly adapted to grazing. Garden vegetables have succeeded well here. All kinds of fruit trees live, grow finely, and do much better here than in more open countries. The extreme richness of the soil, and the protection in winter afforded by the heavy timber, enables almost every kind of fruit tree to do well. The gardens in the various villages yield abundantly all kinds of vegetables; and it is probable that fruit-growing will form a prominent branch of industry in this county.

The important point in considering the resources of this county is the water-powers in that part of Fox River which lies within its boundaries. There are falls at four points—at Grand Chute, at Cedar Rapids, at Little Chute, and at Grand Kaukalin. At each of these points the Fox River Improvement is in a state of greater or less forwardness; and as about fifteen locks, and several miles of canal will be needed in order to overcome the falls, some idea may be formed of the amount of fall at the river between the head of the Grand Chute, and the foot of the Grand Kaukalin.

At the villages on the Grand Chute Rapids, are now four saw mills, a lath machine, two planing mills and sash factories. A large edge-tool factory has also been erected at Appleton, and preparations are now being made to build a flouring mill at the same village in time for the next harvest. At Little Chute there is a saw mill, and another at Grand Kaukalin.

The Lawrence University of Wisconsin, under the patronage of the Methodist Episcopal Church, is located at Appleton, in this county. At present only the Academical Department of the University is organized; but as it is liberally endowed both with land and money, it cannot be long before the Collegiate Department will be in operation. It has hitherto labored under some embarrassments, but it is hoped that these will soon be removed, and that the Lawrence University will take a high rank among the Collegiate Institutions of our land.

With the best wishes for the continued prosperity and usefulness of your Society, and for the advancement of the cause of agricultural improvement,

I am, as ever, yours truly,

P. H. SMITH.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

AGRICULTURE OF RACINE COUNTY.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

Racine, January 31st, 1852.

Dear Sir—Your circular of 1st ult., desiring me to prepare a paper for the State Agricultural Society, containing "a general account of the agricultural interests of Racine County, &c." was duly received.

My experience as a practical agriculturist having been extremely limited, and nearly every moment of my time and attention being absorbed in matters foreign to that subject, I had hoped that other gentlemen, more competent than myself to supply the desired memoir, of whom there are very many in our county, would have responded to your circular.

But having received your favor of the 2d instant, in which you say that I am alone depended on "for information as to that particular matter," I felt that I ought no longer to resist the appeal. I have accordingly devoted snatches of my time during two or three weeks past, to the collection of such random facts and statistics as I have been able to pick up by the way. These facts I have endeavored to arrange in such order as to afford a connected and clear idea of the agricultural statistics and farming interests of this county; and have accompanied them with such fugitive ideas in relation to the matter, as have either occurred to my own mind, or been elicited from others during my brief investigations of the subject.

Area of Racine County.—Under the Territorial organization of Michigan, the district of country now comprising the State of Wisconsin was divided into four counties—Brown and Milwaukee, bounded on the east by Lake Michigan; and Iowa and Crawford, bordering the Mississippi on the west. A Territorial Government having been organized for Wisconsin on the fourth day of July, 1836, its legislature, by an act of the 7th of December of that year, divided the county of Milwaukee, and erected therefrom the county of "Racine," whose limits were thus defined: "Townships numbered 1, 2, 3 and 4 north, of ranges

19, 20, 21, 22 and 23 east." This included the present county of Kenosha, which was set off as a separate county in 1850, and by which Racine was curtailed of nearly one-half her original proportions. As now constituted, Racine county includes the full townships numbered 3 and 4 north, of ranges 19, 20, 21 and 22 east, and fractional townships 3 and 4 of range 23, bordering Lake Michigan on the east—together with the four northern tiers of sections in township 2 of range 19. These boundaries give the county a superfices, by survey, not far from 218,500 acres—or, say 340 square miles.

Proportion of Land occupied as Farms.—Of the aggregate of 218,500 acres, I may safely assume, from the data to which I have had access, (the census returns of 1850, and statistical information from other sources) that 150,000 acres are owned or occupied as farms in this county—about 120,000 of which is improved, and say 30,000 in wood-lots and unimproved prairie; leaving 68,500 acres of unoccupied and non-resident lands, including lakes, ponds, marshes, &c. And assuming that the present population of our county is 16,500 souls, (it was about 15,000 eighteen months ago—in June 1850) 9,500 of whom are engaged in farming operations; and assigning six persons to a family, it will follow that 1583 families are engaged in agricultural pursuits in this county.

Extent of the Agricultural Interest.—Of these 9,500 people, who comprise the 1583 families connected with farming in this county, there are doubtless 3,000 (say an average of two to each family of six persons) who are out-door operatives in performing the requisite labor on the farms; and they will accomplish an amount of labor equal to something like 250 days work each, within the 365 days of the year. Now if we estimate their services at an average of 70 cents per day, it will show that the sum of $525,000—over half a million—is expended annually in the county for farm-labor alone ! Ten dollars per acre would be a moderate average of the value of the 150,000 acres occupied as farms; this will give an aggregate value for the land, of $1,500,000. By the census returns in June 1850, agricultural implements, farming tools and machines, were put down at not far from $130,000; add for increase during the eighteen months that have elapsed since, say $40,000, and we have an aggregate for that item of $170,000. Besides these, the Stock indispensable on a farm—including working horses and oxen, cows, hogs, sheep, beef, and stock cattle, &c.—forms no inconsiderable item in the requisite expenditure for the successful prosecution of that all-important industrial pursuit; the census makes this expenditure more than $300,000, for 1850—say, at this time, (18 months later) $350,000. Allowing $300 to each farm, for dwellings, barns, out-buildings, &c. and we have $474,900 for this item. It will hence appear, that the total investment in the operations of farming in Racine county, is at least $3,019,900—over three millions of dollars!

In view of the small amount of capital possessed in so recently settled a community as ours, this is a vast sum to be expended in what I may be permitted to call the mere *preparations* for farming—and within a county whose area scarcely exceeds twelve by twenty-eight miles.

Agriculture the Paramount Interest.—Of the four primordial sources from which the productive classes derive subsistence for themselves, and create wealth and power for nations, viz:—the sea, the forest, the mines, and the soil—the latter alone, by the aid of agricultural skill, industry, and enterprise, is made to furnish three-fourths of the material that gives existence to the foreign commerce and home-trade of the United States:

Our Exports to Foreign countries for 1851, amounted to.....		$196,689,718
Of this amount, the products of Agriculture furnished..	$145,903,778	
Those of the forest, the sea, manufactures, &c.....	50,785,940	
Showing an excess of Agricultural products over all others, of.....		$95,117,838

Thus it is demonstrated that Agriculture is the great cardinal interest of the nation. And in this particular region, it is not only the leading interest, but almost the sole reliance of our people, constituting the very ground-work upon which the whole superstructure of our business is built and sustained. It is, indeed, the life-blood of all our trade and commerce, and has become the regulator of the whole machinery of our business transactions; so that when agriculture languishes, trade and commerce, manufactures and the mechanic arts, all droop and decline.

How vitally important it is, then, that a branch of industry to which all other interests are merely auxiliary, and with which their business prospects are so intimately interwoven, should be aided, and fostered, and honored by all classes, and at every sacrifice consistent with a proper regard for the subordinate interests of the community. Agricultural associations, and agricultural publications, are undoubtedly among the readiest means of effecting such improvements in the systems of tillage common in this region, as the advanced state of the art at this day imperiously demands—as well as of diffusing valuable information, and of imparting such scientific knowledge to our agriculturists, as will tend to elevate their "calling" to a rank commensurate with its vast importance. No such distinctions as "privileged classes" can be recognized under our republican system; but if, by some anomalous upheaving of the political and social elements of our country, they were to be, the holders of the plough should unquestionably be our "lords paramount" of the realm, since they are, theoretically and practically, already the "sovereigns" of the land. Producing all that commerce subsists upon, they are the arbiters of the trade and business of our towns and commercial marts; and could, if they would, hold the political destinies of the Republic in their hands.

Racine Agricultural Society.—In connection, it may be appropriate for me to state, that our farmers, fully impressed with the utility of agricultural asso-

ciations, organized the "Racine Agricultural Society" on the 1st of September last; and by the 14th of October, 234 persons had become members by the payment of $1 entrance fee each, thus constituting a fund of $234. On the 14th and 15th of that month, an Agricultural Exhibition and Fair was held, at which $203 50 was distributed, in forty-six premiums to different competitors, in sums varying from $10 to 50 cents each. These premiums were awarded, respectively, for the best cultivated farm—best reclaimed marsh lands—best crops of wheat, corn, oats, vegetables, &c.—several for the best horses, working oxen, milch cows, beef cattle, neat stock, sheep, hogs, and breeding animals—for butter and for cheese—for the best ploughing, and various agricultural implements—for manufactures of cassimeres, flannels, sheeps-gray cloth, cabinet furniture, &c. And diplomas were awarded for a variety of fruits, such as apples, peaches, pears, quinces and grapes, and for garden sauce and esculents; for a good many stoves of new and beautiful patterns; for hardware, mechanic's work and wares, ingenious and useful inventions, jewelry, &c; as well as for a great variety of family fabrics, and ornamental and needle work, exhibited by the wives, the daughters, and the families of the members of the society—manifesting a spirit of improvement, as well as a degree of skill and accomplishments, on the part of the ladies of the rural districts of our county, rarely excelled in the most refined of the agricultural communities at the East. So brief a period intervened between the organization of the Society and the holding of the Fair, (six weeks only) that it could not be expected this first exhibition would afford a fair sample of the agricultural products of the county, or of the progress made by our farmers in systematic agriculture, &c. But the exhibition was highly respectable, and highly gratifying to every friend of agriculture in the county. This Society is destined to open up a new and more propitious era for the farming interests of this county.

Constituents of Soil.—Agricultural chemistry teaches, that soil is formed by the intimate mixture of the *debris* of rocks, in the condition of sand, gravel, or clay, with decomposed animal and vegetable substances, in the shape of mould, or *humus*. The simple mineral called alumina, is the base of all clay; while pure clay is composed exclusively of silica and alumina. Any earthy mineral, in a granulated form is called sand. Now for the sake of simplicity and convenience, I will adopt the division of soils into these three constituents—mould, sand, and clay; although by scientific analyses, these are susceptible of an almost infinite subdivision.

Soil, then, is constituted of what might be called an amalgam of sand, clay, and mould. The nature, composition, and value of these constituents of soil, vary indefinitely in different localities; and a slight change in the proportion of the ingredients of a soil, might greatly augment or diminish the product of the

farmer in cultivating crops therein. Earth containing no mould, or combustible matter, is not of itself soil, any more than animal or vegetable substances alone make soil. How important it is, then, that the farmer should know enough of the chemical properties of the surface of the earth he operates in, to enable him to cultivate in each field that crop for which its soil is best adapted—or rightly to temper his soil, so as to effect a judicious combination of those constituents most congenial to the product he may desire to reap from it.

Racine Soil, adapted to Wheat.—I have made these suggestions with a view of illustrating my opinion, that Racine County is a good wheat-producing district; and that the failure of our farmers, for three or four years past, to raise good crops of that grain, is attributable more to a lack of knowledge of the chemical properties of their soil, and to the absence of a judicious system of alternation of crops and sub-soiling, than to any inherent defect of the soil itself.

An eminent Scotch chemist, Dr. Anderson, made critical analyses of several wheat soils in Scotland in 1850; among which, samples of surface soil from Midlothian gave 6.789–1000ths of combustible matter, or mould. Its composition was as follows: Carbon, 4.500—hydrogen, 0.215—oxygen, 1.806—ammonia, 0.268; making 6.789. This soil was distinguished for its productiveness in wheat. Now it is worthy of note, that that powerful fertilizer, Peruvian guano, contains 6.500 of organic animal matter, almost precisely the proportion that is found in the Scotch wheat soil above described.

The celebrated German chemist, author and agriculturist, Von Thær, says the richest soil he ever analyzed, was composed of

19¾	parts in a hundred of humus, (or combustible matter;)
70	..... of clay;
7¼	..... of silicious sand;
3	..... of lime.
100	

The fattest soil, however, is not best adapted to wheat; but according to the testimony of the most intelligent farmers, a first rate wheat soil ought to contain only about six or seven parts in a hundred of humus (or mould)—which it seems, is just the proportion of that constituent in the subsoil of Racine County, as analyzed by Dr. Philo R. Hoy, of this city. The Doctor, by the way, has done good service to science by the investigations he has made in the ornithology, zoology, botany, horticulture, agriculture, &c., of the county; and who may be expected, I understand, at no remote period, to favor the public with his scientific researches.

Analysis of Racine County Soil.—The following is what Dr. Hoy calls his "rough and simple" analysis of the soil of Racine county, but the correctness

of which may be depended on. His samples were taken from a high point on the prairies:

	Soil 4 *inches below surface.*	*Sub-soil* 10 *inches below surface.*
Water of absorption	11.0	10.5
Decayed vegetable matter (humus)	12.5	6.5
Soluble Salts, mostly lime	3.5	6.0
Clay (aluminum)	25.0	28.0
Silicious sand	48.0	49.0
	100	100

Subsoiling requisite.—From this analysis, it will very readily be seen that our surface soil is, as a general thing, too "fat" for a wheat crop; and that the subsoil of itself is better adapted to the production of that grain. Hence the utility of subsoiling our prairie land, is most manifest.

Geology of Racine County.—In Dr. Hoy's note communicating the analysis given above, he thus notices the geological characteristics of this county: "Racine County is underlaid by the 'mountain lime-stone formation,' which comes to the surface at several points, affording a superior quality of lime, as well as stone for ordinary building purposes." He remarks, in continuation, "that the surface-soil of the upland prairie is of a dark color, containing an excess of organic matter. Lime is found in but small quantities near the surface, but as you descend it increases, which, when mixed by subsoiling with the abundance of decayed vegetable matter of the surface, will form a superior wheat loam. The want of success in growing winter wheat, is mainly owing to the superficial manner in which the land is now cultivated. The wheat is sown upon the surface of the black vegetable soil, and the roots penetrate but a few inches; when winter comes, the plants are either blown out by the roots, or the black soil absorbs so much heat when the sun shines, that it is constantly subjected to freezing and thawing, and its vitality is soon destroyed. Now the remedy for this is subsoiling, whereby a soil is brought to the surface that has more consistence, containing more lime and clay, and affording the roots of the plant a deep and permanent footing."

This then will explain more than half the secret of short wheat crops with us. Sub-soiling is undoubtedly among the most important of the remedies. A ready method of doing this, is to cut a furrow seven or eight inches deep at first, and then six or seven inches more at the bottom of the first furrow—thus turning up the subsoil to the depth of some fourteen inches. From the report of an Agricultural Society in Guernsey, England, in November last, I perceive they use heavy sub-soil ploughs there drawn by eight cattle, cutting a single furrow twelve inches in depth and fourteen in width. Might not the same ploughs, and same number of cattle used in breaking up our prairies, be employed to do sufficiently thorough work in sub-soiling here, after the fashion practised in England?

Now if two bushels of good seed wheat to the acre, sown on ground thus prepared, early in September, and covered in with a light plough or cultivator, will not bring a remunerating crop on almost any sufficiently dry land in Racine county, then the failure must be attributed to other causes than defective soil and bad tillage—causes that may be termed fortuitous, and that are as likely to be operative in any other State or county as this.

Diseases of the Wheat Crop.—Yet with every possible precaution, the wheat crop is subject to divers casualties, some of which can neither be foreseen nor guarded against. The farmer consequently runs much hazard of being disappointed, to a greater or less extent, every year, where he places too much reliance upon that grain as his principal marketable product.

Winter-kill may, in a good measure, be avoided by the process of subsoiling just alluded to; yet that remedy will sometimes fail.

The *Fly* is a very troublesome enemy to the growing wheat; for which I know no reliable antidote.

The *Rust* is a disease dependent so wholly upon the condition of the atmosphere at a critical conjuncture in the formation of the berry of the wheat, that neither skill nor care can effect much in the application of remedies.

The "*Rot*," or *Blight*, has proved very destructive to the wheat crop in this region within three years past—affecting most fatally the "hedge-row" spring wheat. It is a mysterious disease—almost as much so as the "rot" in the potatoe; and is believed by some to be superinduced by atmospheric influences, similar to those that cause the "rust." As yet, I have seen no remedy suggested. This disease attacks the berry in the ear, (or head,) generally after it has attained full size, but while yet in its milky state. Frequently one half the berries in a head will be affected, or wholly rotted, while the balance of the grain in that head will remain sound and plump.

Good Farming.—With a very superficial practical knowledge of agriculture, it may appear presumptuous for me to attempt to instruct old farmers in regard to what constitutes good farming. Yet from a diversified reading, with habits of investigation, and ample opportunities of observation, at home and abroad, I may peradventure be enabled to state facts that are not familiar to all minds, and that may not be devoid of interest to the curious inquirer after new truths evolved from old subjects.

There are certain things essential to be done, and rules to be observed, by every cultivator of the soil, in the neglect of which he will incur the reputation of a slovenly farmer; but to farm it wisely, judiciously, and profitably, in this region, all must agree that extra attention is demanded to

A Rotation of Crops.—Hitherto, crop after crop of wheat on the same ground, has followed in annual succession for a series of years. Such a course

would be scouted at the East; and it must be abandoned here, or else every variety of wheat will in succession "run out" with us. But the most judicious system of rotating crops can only be ascertained by actual experiment and close observation. A system adapted to one locality, might be ill suited to another. Each experiment, then, should be chosen with express reference to the chemical properties of the soil, as well as to the climate and the market, of the region where made. Wheat should be alternated with other crops every year. Having seen a rotation like the following suggested, I should think it worthy of trial in Racine county:—1st year, corn, oats and roots, well manured; second year barley or peas—or both; third year, wheat; and fourth year, clover, say for three years.

Circumstances may occasionally arise, that will justify a departure from this rule; in such cases, however, the farmer's own sound judgment would be his safest guide. Rotations similar to the above, have tripled the products of many farms at the East; and I know no good reason why like results might not be attained here, by a similar process.

Manures.—As auxiliary to this branch of the system, the time has now arrived when it behooves our farmers to pay especial attention to the making and preserving of manures, and to the discreet and economical use of them.

Diversity of Products.—Since the conviction has been brought home to the minds of our farmers, that it is unwise and unsafe to rely solely, or even mainly, on the wheat crop as their marketable product, an immediate necessity is felt for increasing the variety of their productions. And it becomes important to know how to divide their attention between grain growing, stock raising, &c. so as to realize the best reward for their labor, skill and money, expended in the management of their farms. In this, as in the rotation of crops, they must depend in a large degree upon their own sound judgment. The shrewdest of our farmers are yearly more and more diversifying their crops and their labors—so that if they fail in some, they may hit in others.

In addition to the ordinary grain crops, grass, &c. our farmers have now become quite awakened in regard to the rearing of horses and neat cattle, instead of importing them from Illinois as heretofore—to the rearing of sheep, for their wool as well as their carcass—to the breeding of pigs and the fattening of hogs—to the culture of flax and flaxseed; and even the cultivation of cranberries is creating a sensation with some of our citizens and practical agriculturists. A broad field is thus opened up to stimulate the enterprise and reward the labors of our farmers. And although some are straitened just now, by reason of the monetary pressure that is felt throughout the country at this particular juncture, yet they possess all the elements of abundant and diversified products—of health, comfort, and competence—all the substantial luxuries of life, indeed—in the broad acres and rich soil that constitute them lords of fertile manors and happy homesteads.

Perhaps there is not a farming country on this continent, where the time, the attention, the skill and the industry of the agriculturist, can be legitimately employed, on his farm, in attending to so great a diversity of remunerating employments, as in Wisconsin. I will enumerate some of the most prominent:

Wheat.—This grain is said to have been first found on the central table land of Thibet, in Asia, where its representative still exists as a grass, with small mealy seeds. Although the wheat crop is becoming more and more precarious, and our farmers are resorting to other products, which hitherto received but little attention, yet it is still the principal crop of our country. According to the census returns for 1850, it would seem that the aggregate of wheat grown in Racine county that year, was something over 300,000 bushels. And it appears from authentic data, that the quantity of wheat shipped from the port of Racine, in 1851, was 284,678 bushels—besides 114,885 bushels, in the shape of 22,977 barrels of flour.

About twenty varieties of winter, and eight or ten of spring wheat, are most commonly in use throughout the United States. Latitude and locality usually determine the favor or disfavor in which these varieties are respectively held in different regions of the Union. In this county, the red-beard or Mediterranean, the white flint, the bald white, the Etrurian, the Soules, the red-chaff bald, and the blue stem, are the kinds that most attract the attention of our farmers, or have done so for a year or two past. Which of these is best adapted to this particular region, is a mooted point with our most astute farmers. Perhaps the best sample of winter wheat that has been sold in this market, of the last year's crop, was of the Soules kind, from Walworth county; and it was the same kind that took the premium at the Racine County Agricultural Fair, in October—no other sample was exhibited to compete with it. Mr. Nicholas Le Prevost, and some of his neighbors, living near this city, have been raising the Etrurian winter wheat for a year or two past, and have succeeded well with it. With deep ploughing, it is seldom winter killed, and rarely affected by the rust. It yields them from 22 to 25 bushels to the acre, the berry being bright and plump. Mr. Le Prevost sold most of his crop for seed, at one dollar per bushel.

Spring Wheats—"Hedge-Row."—This species of spring wheat became a great favorite among our farmers six or seven years ago, and had nearly supplanted all other kinds in this county. It yielded from thirty to forty, and in some instances, fifty bushels to the acre, of sound plump grain, which at one time sold for nearly as much as winter wheat. Even careless tillage would bring thirty bushels to the acre; and the crop was considered as sure as oats. But it had its day; and, to use a common phrase, has now nearly "run out." Its culture is gradually being abandoned by our farmers, and other kinds substituted in its place.

"Canada Club" seems to find most favor lately; and the Italian, Black Sea, Pritcher, Red River, (Pembina,) and Labrador, are being tried by our farmers. The latter, however, proves too hard and flinty, and flours badly.

Oats.—This grain was originally found in North Africa. The crop has been unusually productive the past year. Something like 207,000 bushels is reported for 1850, as the growth of this county for that season. Assuming that as data, and the product for 1851 should be stated at 400,000 bushels at least, for a more prolific crop than the last was never known in this region. Over one hundred bushels to the acre, was proved at the agricultural fair. About 100,000 bushels was shipped from this Port during the past season of navigation.

Corn.—Or Maize, which is indigenous to the American continent, is ordinarily a good and safe crop in this county. About 80,000 bushels have been grown in this county the past season, and not far from 20,000 bushels shipped abroad from the port of Racine. Corn will be more extensively cultivated hereafter, for fattening pork and beef, for feeding stock, and for family use. It does not pay well for shipment, except to the lumber region. Last season was remarkably unpropitious for the corn crop; cold rains continued through May, causing much of the seed to rot in the ground, and thus creating the necessity of re-planting.

Barley.—Is found wild in the Himalaya mountains, which bound Bengal and Upper Hindostan on the north, and form the rich valley of Cashmere, from whence the costly shawls bearing that name were originally brought. Barley requires a fatter soil than wheat, and is consequently better adapted to the dark surface soil of Racine county. Forty bushels to the acre is a common yield, and thirty-five to forty cents a bushel the usual price, while the crop almost always "hits." It proved more profitable than spring wheat the past season, in this county. The product of 1851 somewhat exceeded 50,000 bushels; 40,908 bushels were shipped from this Port in that year.

Buckwheat is said to have come originally from Siberia and Tartary. It grows luxuriantly in our soil, and yields abundantly. The home-consumption is large; it supersedes, to a considerable extent, the use of other bread-stuffs in very many families, at one meal in each day at least, during four or five months in the year. Some 30,000 bushels, was the product of this county for the past year. The export has been small, thus far.

Of Peas and Beans, I know not the origin. They are of the same class of leguminous plants, however, as the "lentil" of Scripture history: And I have somewhere seen it suggested, that one or both may have been added to the lentils which are supposed to have formed a principal ingredient in that "mess of pottage" which cost a personage of some note among the ancients his "birth right." They are thus used in the "olla podrida" of the Peruvians—a "mess"

which I have found particularly grateful to a collapsed stomach, after a dinnerless tramp over the bald "sierras" of the tropics "where it never rains." Nowhere (always excepting California) do peas and beans thrive better than in Racine county, although they are not extensively cultivated as a field crop. They pay well as a remarkable product at the East, but are just beginning to be grown with that view here. The home consumption is large; 450 bushels only, were exported from Racine last season.

Potatoes.—Of this important article of "food both for man and beast," the production has greatly decreased, in proportion to the increase of population, within three years past—wholly attributable to the "rot," or disease, which has made such sad havoc in that crop, here and elsewhere. A few years since, Racine exported thousands of bushels of potatoes to Chicago and other points; but the "rot" has nearly cut off that product from among the items that make up the commerce of our port, a few only being shipped to the lumber region. Some think, however, that the rot has nearly had its run.*

Sweet Potatoe.—Small patches of this delicious vegetable are grown by some of our farmers, who have occasionally produced a tolerably good article, and intend hereafter to experiment more largely upon their culture. A light, sandy, warm, dry soil, is best adapted to the growth of the sweet potatoe.

Flax.—Next after cotton and wool, flax is the most important material that has yet been discovered for clothing the civilized portion of the human family. And the inducements to its culture are greatly increased, from the fact that it may be made virtually to yield two crops a year—one from its fibre, and the the other from the seed. It is calculated that a good crop will give 350lbs. of flax lint to the acre; of which about one-third, say 120lbs., will be flax cotton, and the other two-thirds, say 230lbs., coarse tow, suitable for bagging, or the paper mill; and of seed, there will be from twelve to fifteen bushels to the acre. The product of one acre cultivated in flax may therefore be stated thus:

Flax cotton, 120 lbs, at 7 cents per lb	8.40
Flax lint, or tow, 230 lbs. at 3 cents	6.90
Lin-seed, 15 bushels, at 85 cents	12.75
Annual product per acre	28.05

* Potatoe Rot.—Mr. Flanders, of Lowell, Mass., says, the sprinkling of slacked lime on the potatoe vines, is a remedy for this disease, alleging that it "kills the insect that causes the rot;" and some farmers in Maine and New Hampshire, who have tested this remedy, endorse it as efficacious. It is easily and cheaply tried. Mr. Charles Morren, a Professor in the University of Liege, (on the borders of Belgium,) attributes this potatoe disease to a *fungus*, extremely thin and prolific. He says this *botrydis* pollulates or reproduces in an incredible manner; and describes the reproductive bodies as in the form of an egg, not exceeding in diameter the 392-700ths of an inch. But he prescribes no remedy.

This is, certainly, a very fair remuneration for the labor and cost of tillage. Even when cultivated for the seed alone, flax is a profitable crop, yielding, in that event about twenty bushels per acre; which at eighty-five cents, is seventeen dollars cash, since there is always a ready and cash demand for the article, and the price very seldom fluctuates. Active inquiries in regard to the flax culture, are being made in all parts of the State; and the farmers of Racine County are preparing to go more largely into that crop the coming season than heretofore.*

Hops.—Grow spontaneously as a wild creeper, in most parts of northern Europe and the United States. Their culture is made profitable in England and Germany, and in the older settled portions of our country. The soil and climate of Racine county are well adapted to their culture, and I understand some of our farmers mean to try the experiment of hop-raising. Experiments in other counties have been eminently successful. I learn that a farmer in Kenosha county, last season, realized $60, nett profit, per acre, from the culture of hops. And it appears from the *Watertown Register*, that a gentleman in Waukesha county, sold hops to the amount of $1200 last season, which were the product of six acres. And another farmer, in Jefferson county, sold $1000 worth of hops from four acres! These cases are undoubtedly the result of extraordinarily good management, good seasons, good markets, and good luck! But they show what can be done by enterprizing farmers.

Vegetables.—No where (out of California) do onions, beets, parsnips, carrots, pumpkins, turnips, and every variety of garden vegetables, grow more luxuriantly or yield better than in this county, or in Wisconsin generally. Vast quantities are consumed in families, and some—especially onions—are shipped to regions less favored.

Tobacco—which is indigenous to the American continent—has attracted the attention of some of our agriculturists as a marketable product. Small patches have already been cultivated for family use; and as a considerable portion of our people indulge in the luxury (or vice, according to the fancy of the reader) of the pipe, several of our farmers design trying the crop for the supply of that demand.

The Cranberry is a native of both Europe and America. It grows spontaneously and abundantly in some parts of Racine county. On and near Wind

* Flax.—Chevalier Claussen (a German, I believe,) has invented a process and a machine for converting the green flax, immediately on being pulled from the field, into flax cotton ready for spinning, without being previously "rotted," &c. as hitherto practised. He has obtained a patent from our government, and sold rights for using the invention in most of the New England States, as well as in New York, Illinois, &c. It has been tested in presence of some of the most intelligent of the artizans and men of science at the East; and it would seem to be their opinion, that it performs all that is claimed for it.

Lake, in the town of Norway, I am told, more than 150 bushels have been picked by hand the past season—a boy being able to gather with his hands two bushels a day, for which he receives twenty-five cents a bushel, as his share in the crop. Cultivated cranberries are gathered by means of iron wire rakes, with which a man can get forty bushels a day. These Wind Lake Cranberries are decidedly the finest that were ever brought to this market. They sold in Rochester, not far from where they grew, at $1 50 per bushel, and in Racine, 23 miles distant, at $2. On wet land, they can be propagated by being sown broad-cast; and on a drier soil, they may be cultivated from the plants, in drills sixteen to twenty inches apart. They should be well weeded the first year, but will need less attention the second; and on the third, they usually spread over the ground so as to protect themselves—bearing you a crop of fruit to reward you for your time and trouble. 150 bushels to the acre, would be a moderate yield for cultivated cranberries; and the expense of cultivation, in the long run, would be less than for almost any other crop. I am among those who esteem the cranberry, for sauce, jellies and tarts, one of the very best fruits we have. They can be saved, perfect and fresh, for as long a period as the apple; and are more easily prepared for the table, on an emergency.

Grass and Hay.—Dr. Hoy remarks, that the "last two seasons have abundantly proved that the prairies [of this region] produce timothy, clover, and red-top, as well as the best timbered districts for grazing," and, I may add, for grass lands generally. Being now assured of this fact, our farmers are very generally turning their attention to the rearing of stock, and to the curing of hay from cultivated grasses, for exportation as well as for home consumption. Until recently, abundance of upland prairie hay, some of it nearly equal to timothy, could be readily and cheaply made by every one who might need it; hence the cultivation of the tame grasses was neglected. But since a large proportion of the country has now become occupied, and very much of it already passed under the plough, the necessity of cultivating grasses has become imperative, and large fields are yearly being ceded to timothy and clover, principally the former; in wet ground, however, red-top is found to thrive best. Hay is becoming an article of commerce with us. Some of our farmers, near this city, pressed, baled, and shipped abroad, 250 tons during the past season.

Grass Seed.—Many are devoting a good deal of care to the cultivation of grass seed. Some 5,000 bushels was saved the past season in this county; and 340 bushels was the amount of our exports of that article for 1851. From 160 acres ceded to timothy in the town of Yorkville, in this county, the entire crop of grass was cut and thrashed; the yield of seed was over 4½ bushels to the acre—giving an aggregate of 720 bushels. The hay, however, is much damaged in the process of thrashing out the seed, but was worth at least $1 per ton;

while $2 per bushel for the seed is the lowest price in the home market. The product from this 160 acres, then, may be thus stated:

160 tons of thrashed Hay, at $1 per ton	$160
720 bushels of Seed, at $2 per bushel	1,440
Showing an aggregate product of	1,600
Every item of expenditure could not have exceeded	500
Exhibiting a net cash profit of	1,100

It would be a fair estimate of the value of these 160 acres, fenced, ceded to timothy, and with suitable out-buildings, &c., to place it at $20 per acre; say, for capital invested, $3,200; showing a clear profit of more than 34 per cent. It will thus be seen, that this branch of farming can be made gainful if judiciously managed.

Fruit.—I have the testimony of Dr. Hoy, who is theoretically and practically a horticulturist of many years' experience, that "apples, pears, cherries, and plums do well" in this county, "so far as the young trees have come into bearing." But he remarks, further, that "peaches, nectarines and apricots, will never be a sure crop" in Wisconsin, because the cold of the winter kills the 'blossom buds' of these kinds of fruit. Another intelligent gentleman suggests, however, that it is the long continued warmth of our autumns that does the mischief to the peach crop. The genial temperature of the "Indian Summer" of Wisconsin, swells the blossom buds of the peach late in the "fall," thus rendering the germ of the fruit extremely liable to be killed during the winter.

"The Clinton and Elsenburg Grapes," continues Dr. Hoy, "are perfectly hardy, and never fail producing a large crop. The Isabella does well in most localities, the fruit generally ripening.

At the late Racine Agricultural Fair, diplomas were awarded for the best samples of apples, peaches, pears, quinces, and grapes; and it is said that this display of Racine county fruits, excelled that exhibited at the State Agricultural Fair at Janesville.

In the year 1846, Mr. Seth H. Kellogg, then of this county, sold about $60 worth of peaches, the production of his own orchard. And I have eaten as fine peaches raised by the Rev. Mr. Hall of Geneva, Walworth County, as I ever did in the peach regions further south. Walter Cooley, Esq., has also produced most delicious peaches on his farm near this city, as have many others of our citizens in different parts of the county. Yet, as Dr. Hoy remarks, the peach is not a sure fruit with us. Our region, however, appears to be quite congenial to the apple. A good many barrels of native Wisconsin apples, have been sold in the Racine market the past season, which were superior to those brought from

New York and Ohio; from whence, however, thousands of barrels are yet annually imported into this part of Wisconsin.

Stock-Raising.—Experience shows that Racine County is well adapted to the rearing of neat cattle—of cows for the dairy, beeves for the shambles, and steers for draft oxen. The number of cattle driven into this State from Illinois and Indiana, is decreasing yearly; and our farmers are now more saving of their calves for stock, which they are manifesting much anxiety to improve by choice breeds. It appears from the census of 1850, that the value of every kind of live-stock was then stated at $250,000 in the county, and may now be safely put down at $300,000.

Beef and Pork.—Several of our enterprizing citizens are vigorously pursuing the business of packing beef, pork, &c.; some 4,000 barrels were shipped abroad from this port during the past season, of an aggregate value of $35,000. The number of slaughtered hogs brought to Racine during this season has been large; and much pork fattened in our county has found a market elsewhere. Pork now sells readily at from $3 50 to $4 50 per cwt.; whereas some few years ago it brought only $2 to $2 50.

Horses.—Of these noble and indispensible animals, there are about 3,000 in Racine County, of an average value, say, of $150,000. [In Ohio it appears that the whole number of horses is 517,396, and the average value per head $39. Whole number of mules 105,968, and the average value $47 a head.] There is a diversity of opinion among our farmers as to the relative utility of horses and oxen as working animals on a farm, although very many use both. There are probably not to exceed 2,000 working oxen in the county; the horses therefore predominate as to numbers. Yet, when it is considered, that no inconsiderable portion of these 3,000 horses are used for other than farming purposes, and that the 2,000 oxen are all literally beasts of burden to the farmer, we may set down the number of each description of animals that are directly employed in agricultural operations as nearly equal. It may be assumed, then, that at least two-thirds of all the horseflesh in Racine county is in the shape of farm horses. This of itself exhibits, in a strong point of view, the utilitarian characteristic of our people. In England, where the privileged classes, such as the "gentry," the "nobility," &c., are numerous, out of 2,000,000 of horses in the kingdom, only one-twentieth, say 100,000, are used for agricultural purposes! A large proportion of the balance, are what may be called "pleasure horses"—mere accessaries to the luxurious propensities of man! Many of our farmers are now devoting much of their attention to the rearing of colts; and the show of horses at our agricultural exhibition was respectable.

Wool and Sheep.—It is believed that wool is to become one of the most important marketable products of this part of the State. There are at this time,

however, less than 10,000 sheep in Racine county, and the product of wool will not much exceed 25,000 lbs. for the past season. Of this quantity of wool, the three woollen factories in the county, (two at Burlington and one at Waterford) together with the family spinning wheels and looms, and the fire-side knitters, use up a good deal. A large proportion of the wool produced in the counties immediately west of us, sought and found a market at Racine, as is evidenced by the heavy shipments of that article from this Port in 1851, the exports of that year being 106,471 lbs. Prices paid for wool the past season have justified a renewed attention to sheep; and our farmers are now selecting the best breeds with which to replenish their flocks. A determination to go more largely into the wool business than heretofore, is prevading our county. It has been demonstrated, that, with judicious management, sheep rearing can be made a profitable branch of farming in this county. Mr. Benjamin Stock, of the town of Yorkville, purchased 565 choice sheep in 1850, for which he paid $847 50, or rather gave his note for that amount payable in one year at 12 per cent. From the product of wool from his flock, and from the sale of fat wethers and lambs, he was enabled, at the end of the year, not only to pay the principal and interest of the purchase money, but to retain the full number of sheep with which he began; the increase of lambs having been equal to the deaths by casualty, fatlings sold, &c.

Again: Another farmer of that town, took 100 on terms similar to those just named; and from the fleeces of his flock, and the fatlings he sold from it, he realized sufficient to pay principal and interest of the purchase money, with about $5 cash as a surplus, and his full complement of 100 sheep remaining, and paid for, at the expiration of the year. These operations are the result, doubtless, of good farming; but they are conclusive as to the gainfulness of this branch of agriculture, where good management is favored by moderately good luck, good markets, &c.

Manufactures.—Independently of the considerable amount of wool worked up in families, there are three woollen factories in the county—two at Burlington, owned respectively by Messrs. James Catton and Pliny M. Perkins; and one at Waterford, owned by Mr. Dean, which consume a good deal of wool in the manufacture of cassimeres, flannels, sheep's gray cloths, and divers other fabrics.

An oil mill is in operation at Burlington, owned by Mr. Perkins. His purchases of seed for the year amounted to 600 bushels of flax seed, at 84 cents per bushel, and 200 bushels of rape seed, at 75 cents. From this 800 bushels of seed, it seems he manufactured 1,300 gallons of oil, worth $1 per gallon. This certainly exhibits a remunerating business.

Of flouring mills, there are seven or eight principal ones in the county, which involve a capital of something like $100,000, and work up, say, 300,000 bushels

of the different varieties of grain. Of flour, 22,977 barrels were shipped from this Port in 1851, and a like quantity consumed.

Furnaces and Foundries.—The three air furnaces and foundries in operation at Racine, employ a capital of $25,000. From these manufactories the country interior is supplied with hollow ware and stoves, a great variety of castings for mill-irons, for machinery, &c.

For the manufacture of threshing machines, fanning mills, carriages, waggons, ploughs, &c., there are some eight or ten factories in operation at Racine, Burlington, Rochester, Waterford, &c., requiring a capital invested of some thirty to forty thousand dollars.

The total annual produce of these establishments, and of all other manufacturing industry in the county, cannot fall short of $350,000.

HISTORICAL.

Bordering as this region did the south-eastern extremity of Wisconsin, and nearest in proximity with the "white settlements," it was here that the ploughshare earliest obliterated the war-paths," and effaced the moccason-prints of those powerful bands of the nomadic race, to whom Wisconsin was whilhom one vast "deer park." The brave, the magnanimous and athletic chief, "O-co-mah-wah-ba-she," (or The White Swan Chief,) who was "born to white man's estate," with his band of Potawatomies, were the last remnant of Aboriginals who lingered on the banks of the "Ah-chip-pe-cotton"—known among the French sojourners here as the *riviere de Racine*, but rendered "Root River" in our vernacular. Even this remnant of the "White Swan's" tribe, took their final departure hence as early as 1833, sullenly wending their way to the distant north-west, in search of new hunting grounds, and of "a lodge in some vast wilderness" far removed from the perilous proximity of the insatiate "pale faces."

American adventurers began to make "claims" in this vicinity that same year. And I believe Hon. George H. Walker, the present worthy Mayor of Milwaukee, built his first occupant's shanty in Wisconsin, at or near "Skunk's Grove," in this county, in the autumn of 1833. In 1834–5, several families located at the mouth of Root River, and founded the village (now city) of Racine, adopting the French name of the river for the village—Captain Gilbert Knapp having been the principal pre-emptor of the village plat.

City of Racine.—Racine occupies one of the most beautiful locations for a town on the western shores of Lake Michigan; and as it proved to be an eligible point for a commercial mart and Lake Port, capital and enterprize were early attracted hither, and the place had a rapid, continuous and healthy growth, as will be seen by the following statement of six several enumerations of its inhabitants.

CENSUS RETURNS OF RACINE.

In 1840, the population was only	337	In 1849, it was	4002
1844,	1,100	1850,	5,111
1847,	3,004	1851,	5,897

And at this date, 1852, our population will doubtless exceed....6,000.

RACINE HARBOR.—The population of Racine is composed mainly of matter-of-fact people, the business portion of whom are markedly utilitarian in their views, and practical and discreet in their operations. And although in their expenditures for public works, and in aid of all laudable enterprizes, they have displayed a munificence unsurpassed in any country so newly peopled, yet in the bestowment of their liberality they have usually discriminated in favor of objects of known utility. Principally by their own energy and enterprize, and by heavy expenditures from their private means, a HARBOR has been constructed here that can accommodate all the shipping that navigates this Lake.

The people themselves projected and commenced this important work; and, up to the present time, they have expended

In its construction	$43,352 42
Add this amount, appropriated by Congress	12,500 00
And the total cost of the Harbor at this date will be	$55,852 42

It is believed to be without a parallel in the history of the improvement of the Lake region of the West, that a single community, of limited population, should have projected and successfully prosecuted, mainly by their own efforts—by personal services, individual contributions, and self-imposed taxes—a public work of the nature and magnitude of the Harbor at Racine.

AS A HARBOUR OF REFUGE.—For the retreat and shelter of Vessels navigating Lake Michigan in stormy weather, or in the winter months during the close of navigation, RACINE possesses the advantage of ample capacity in her inner harbor, with an abundant depth of water in the River immediately above. A merchant fleet of a hundred sail of Lake craft, could lie in perfect security here, with their anchorage protected from storms by the adjacent bluffs.—1,660 vessels visited this Port during the last season of navigation; and 24 sail of vessels found a "snug harbor" here during the winter.

SHIP-BUILDING AT RACINE.—The Port of Racine consequently offers superior advantages for the building, equipment, and repairing of all classes of Lake vessels. Ship timber abounds in the immediate vicinity, and ship knees are even exported hence to New York at a profit. There are two SHIP-YARDS in active operation here, owned respectively by Messrs. Justice Bailey and Daniel P. Putney, each of whom has erected a Rail-way at his Yard, on which to haul out vessels for repairs, &c.—3 schooners were built at these Yards during the last

season; 1 schooner is now on the stocks, nearly completed; and 26 vessels of all classes, have been repaired here during the year.

SHIPPING, OWNED WHOLLY, OR IN PART, AT RACINE:

Propeller James Wood	owned by W. T. Richmond	Tonnage 300	Value $12,000
Brig Mohegan	Norton and Durand	255	8,000
Brig Sam Strong	Norton and Durand	245	7,500
Brig Cherokee	Durand and Hill	204	7,500
Brig Iroquois	W. T. Richmond	310	7,500
Brig Olive Richmond	W. T. Richmond	250	5,000
Brig Ontonagon	Isaac Taylor	230	6,000
Brig Anne Winslow	F. A. McHenry	200	3,000
Brig Ontario	N. Pendleton and Co.	160	2,500
Schooner Mount Vernon	W. T. Richmond	240	7,500
Schooner Whirlwind	Canfield and Co.	190	5,000
Schooner Newbold	John G. Conroe	180	4,000
Schooner Lewis C. Ervin	Canfield and Co.	170	4,000
Schooner Charles Howard	Messrs. Raymond	100	2,500
Schooner Union	H. Denton	100	2,500
Schooner Colonel Benton	W. T. Richmond	160	2,000
Schooner Rocky Mountains	Coleman and Linn	135	1,500
Schooner Seventy-Six	George D. Fellows	85	1,800
Schooner Glynachor	J. W. Jones and others	78	1,600
Schooner Erie	John Gallien	70	1,400
Schooner Mariner	E. M. Beckwith	80	1,200
Schooner Asa Wilcox	Harvey, Francis, and others	125	1,200
Schooner Dolphin	James M. Sprague	90	1,200
Schooner Liberty	Miller and Peters	80	1,200
Schooner Amelia	Mrs. Clark	85	800
Schooner on the stocks	Alexander C. Stebbins	130	4,000
Sloop Wunx	A. D. Eveland	60	1,200
Sloop Lady Ann	David Youngs	60	600
		4,372	104,200

Whole number of Vessels owned, in whole or in part, at Racine, **28.**

IMPORT AND EXPORT TRADE OF RACINE.—At different periods heretofore, much pains has been taken to obtain correct statements of the trade and commerce of Racine; and to afford a condensed view of these statistics, the following abstract is appended, made up from reliable data:

In 1836, our Imports amounted to	$52,835
While the Exports were only about	14,000
In 1841, the Imports rose to	108,898
Exports	25,041

In 1842–3, the enterprize of our citizens was called into requisition for the improvement of their Harbor; and the work was prosecuted with such vigor, that at the end of three or four years good harbor facilities were afforded here to the shipping of the Lakes; and

In 1847, our Imports amounted to	$546,599	
And the Exports to	496,490	
In 1849, the Imports were	757,000	
The Exports	630,950	
In 1851, the Imports were		$979,558
Exports		579,704
Aggregate Commerce of Racine, 1851, Monied value		$1,559,262

SOME OF THE ITEMS OF LAST YEAR'S EXPORTS:

Of Wheat, there was shipped from Racine the past year	284,678 bushels	value $185,040
Flour	22,977 barrels	91,908
Wool	106,491 lbs	42,588
Leather, manufactured here, and exported	47,353 lbs	9,470
Hides, green and dry	160,000 lbs	8,000
Beef and Pork	3,854 barrels	35,270
Oats	80,893 bushels	20,223
Barley	40,908 bushels	20,454
Corn	18,941 bushels	6,620
Hay	250 tons	1,500
Packing barrels	4,043	4,043
Ship Knees	279	2,790
All other Exports		151,798
Showing the value of our Exports, as above stated, to be		$579,704

MANUFACTURING CAPITAL.

Capital invested in Manufactures in the City of Racine	$257,000
Total annual value of the product of Manufactures in the City of Racine, say	$277,000

All of which is respectfully submitted to the Executive Committee of the Wisconsin State Agricultural Society, to be disposed of as they may deem most conducive to the advancement of the objects for which the Society was instituted.

By their fellow-citizen,

PHILO WHITE.

MANUFACTURES OF RACINE COUNTY.

Rochester, December 31st, 1851.

Dear Sir—I am honored by your request of an article upon the manufacturing interests of Racine county, for the use of the State Agricultural Society. Glad to aid, in any way in my power, the Officers of the State Agricultural Society in any undertaking for the promotion of the cause in which they are laboring, evidently, with much fidelity, zeal and ability, immediately on receipt of your request, I addressed letters of inquiry to different individuals in our county, intended to elicit information in regard to individual operations in the various branches of manufacture; and the statements embodied herein are mainly the result of such inquiry.

The present county of Racine is one of the smallest in the State, embracing a territory of about twenty seven miles east and west, by twelve miles only north and south. It is not what would be considered, naturally, a manufacturing county, having no water-power, excepting in the eastern part, where Root River affords water-power of considerable efficiency; and in the western part where the Fox River at Waterford, the Fox and Muskego at Rochester, and the White and Fox Rivers at Burlington, afford quite extensive power, not often excelled in this State. The interior of the county from Root River to the Fox, is entirely deficient in water-power and in manufacturing operations. Yet, although we are not remarkably favored as a county with natural facilities for manufacturing, from the enterprize of citizens in the improvement of those we do possess, and in the introduction of steam-power to a considerable extent, and from industry in various handicrafts, we shall be able to give a statement of manufactures that we think will compare favorably with other counties in Wisconsin.

Those who have furnished the information upon which much of our account is based, have had recourse, in some cases, to statistics of 1850, and in one case to 1849, with the signification of a probable increase for 1851. In the statements which follow, we may embrace some branches of industry which may not be considered strictly manufacturing. On some branches, we enter into the computation, some allowance on operations of a small magnitude not reached by our inquiries.

We find, then, that there are employed in the different branches of manufacturing and mechanical industry, in Racine county, 900 hands, and a capital of $350,000 in real and personal estate; consuming yearly $550,000 in raw material, and resulting in $940,000 value of annual products.

The following statements, under the head of different branches, will set forth the state of these interests more particularly. First, manufacture of

Woollens.—There are three woollen factories in the county. One, containing one sett of machinery, but capable of holding two setts, has manufactured 20,000 lbs. of wool in a year, producing 16,000 yards of cloth. Another, of about the same capacity of machinery, has confined its operations mainly to the manufacture of yarn. Another, which has been in operation at times for a number of years, and now in complete repair, of capacity for manufacturing 60,000 lbs. per year, is at present closed for want of capital. In these are invested in buildings and machinery about $20,000.

Lumber.—Taking the year 1851, the amount of lumber sawed was 4,250,000 feet. There are nine saw mills in the county, six water mills, and two steam. The latter alone manufactured $2\frac{3}{4}$ millions of feet of lumber in 1851; mostly oak plank for the plank road from Racine to Delavan, forty-four miles; and for a road from Milwaukee, which is nearly completed to the village of Waterford, in this county, about 25 miles, and is destined to cross the Racine plank road at Rochester, in its course south-west to Burlington, &c. We consider this mention of these roads, in this connexion, as not irrelevant, as they may themselves be classed among "manufactures of the county," though not so estimated.

Milling.—In this county there are seven large flouring mills. One steam mill, and six propelled by water-power; one large steam flouring mill having been recently destroyed by fire. The number of bushels milled annually, may be put down at 475,266 bushels of wheat, and 28,432 bushels of other grain. Capital invested in milling $75,000.

Foundry and Mechanist.—There is $35,000 employed in general foundry and such mechanist business as is usually connected with foundries. The number of foundries in the county is three, using annually 210 tons of pig iron, thirteen tons wrought iron, and 120 tons of coal. Steam is the motive power of two establishments—of the other, water.

Tin and Copper.—This branch consumes $17,246 in value of raw material, producing $27,760 value of manufactured articles, among six shops; all of which also deal largely in stoves and other articles not manufactured by them. Of the single article of stove pipe alone, these shops make annually thirty-five tons.

Tanning.—The tanneries, of which there are two, have an invested capital of $12,000. Average annual product, $28,000. Steam being the motive power used in one—in the other, horse power.

Waggons.—There appears to be four hundred waggons manufactured in this county, yearly, requiring $9,000 value of raw material, and turning out in products to the amount of $25,000.

Bricks.—The annual amount of this article manufactured is 1,666,000, employing from twenty to twenty-five men.

Brewing.—Statistics before the writer show, in this business, in 1850, 4,000 bushels barley, $2,000; 1200 barrels beer, $6,000. The writer is one of those who would think, the less the amount under this head, the more advantageous would be the comparison with sister counties, and for that reason has made no enquiry calculated to elicit statistics of one, and the only, distillery in the county. 'In the *main*,' he thinks the law of *Main-e* best applicable to such subjects.

Agricultural Machines and Implements.—In some articles in this department, Racine county, we think, will hold an advantageous comparison with any part of the State. There has been manufactured in this county from five hundred to six hundred threshing machines of various kinds, which have been circulated over the State, and to a considerable extent in Illinois and Iowa, giving, it is believed, excellent satisfaction. Ploughs are manufactured quite extensively, averaging from four hundred to six hundred of steel ploughs annually for a number of years. Cast ploughs, of excellent model, are manufactured at some of the foundries. This county has probably manufactured a larger number of fanning mills than any other county in the State, there having been, on an average, three shops for a number of years, turning out probably an average yearly aggregate of six hundred mills. From 4,000 to 5,000 in all have been made in this county. The shops now in operation are all connected with branches in other parts of the State. This county, and its branch shops, have supplied a majority of the fanning mills used in the State. Something is done in the manufacture of other implements and machines, in regard to which we have no data from which to form an estimate.

We shall conclude our account of the Manufactures, &c. of this county, by throwing other branches into a brief tabular view, as follows:

Kinds of Manufactures, and Amount or No. of Articles annually.	Value Raw Material.	Value Production.
Soap, 316,370 lbs.; candles, 118,000 lbs.; lard oil, 25 bbls.	$15,934	27,130
Lime, 35,000 barrels		15,000
Saddle and harness	6,673	15,575
Shoemaking—27,050 pairs of boots and shoes	22,125	57,512
Coopering—35,000 flour & packing barrels, & miscellaneous	6,065	20,000
Blacksmithing	9,166	25,200
Tailoring—4,150 coats and pants, and 2,154 vests	21,158	29,218
Jewelry	5,100	8,014
Cabinet work	2,219	7,123
Baking	3,360	5,900
Butchering	48,472	66,475

There is one mill in the county for the manufacture of linseed oil, capable of making 9,000 gallons of oil per year; but from want of flaxseed, the amount manufactured is limited. P. M. Perkins, Esq., of Burlington, the owner of this mill, one of our best practical farmers and manufacturers, in a letter to the writer, says—"The raising of flax is soon to be one of our great staples. It has been one of our best crops when raised merely for seed; but hereafter there will be a market for both seed and lint. If the flax-cotton comes in and takes the place of cotton, it must make a great business for the northern States. I think there is none that can raise it to greater perfection than Wisconsin." If this extract is incongruous with the general tenor of this article, I am sure it is not so with the general objects of your Society.

I submit the foregoing as the best compliance I can make with your request, with the permission to make such use of it as you please; rejecting any part or all—using it in any shape that best accords with your plan.

In closing, allow me to express a hope and trust, that the State Society will continue to prosper. The reduced profits of farming for the few past years, have had a tendency to discourage and dishearten all interests in the State. Something is needed to inspirit the farmer to try on—to excite his ambition, and to fix his attachment to his calling still, and to Wisconsin still, and to animate all other interests to exertion and advancement. I have conceived that the action of our Agricultural Societies have this tendency, and all honor, I say, to their promoters.

Most respectfully yours, &c.

RICHARD E. ELA.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

AGRICULTURE OF ROCK COUNTY.

Janesville, December 26th, 1851.

Dear Sir—Your letter came to hand in due time, but press of business has prevented my attention from being turned to it until the present moment. Nothing would afford me more pleasure than to be able to give satisfactory answers to your interrogatories. Knowing my inability to do justice to the undertaking, I should have declined it altogether; but from the fact of its being so late, I was fearful you would not find any one else who would be willing to perform the duty on such short notice. So hoping you will take the will for the deed, in a measure at least, I submit this heterogeneous mass to you with all its faults.

First, as to the general condition of Agriculture in Rock County, I must answer that it is at present in a very depressed state; the cause of it is, that wheat has been the great staple upon which our farmers have relied, and relied so confidently, that they have anticipated the crop for a year or two in advance—and its partial failure for the last three years has produced a state of universal indebtedness, which added to the present extreme low price of most kinds of produce, has caused a general cry of hard times from one end of our county to the other, and very justly so no doubt.

From the first settlement of this county up to the year 1848, wheat was a very profitable crop, and considered as sure as any other; but since that time, from some cause, or causes, as yet not perfectly known, but comparatively few good crops of wheat have been raised.

One cause of the failure in the wheat crop may probabably be attributed to the want of snow for the last three winters. Snow exerts a twofold influence on the wheat plant—one is to protect it from the extreme cold of our winter winds, another is the large amount of nitrogen, in the form of ammonia, brought by it from the atmosphere, and with which it enriches the soil about the young plant, and supplying it with an absolute essential in the formation of the grain. This is also obtained by the application of gypsum. Another cause probably is, the exhaustion of alkali, which has been accumulating for years, by the repeated burnings of our prairies and openings. I do not wish to be understood as presenting this as a postulate that needs no proof. I am too much of a tyro in the science of agriculture for that, but merely throw it out in the form of a hint to others, who may be better qualified to prosecute the inquiry—believing myself that there is some truth in it.

In answer to your next inquiry, as to the manner of cultivation in this county; a strict regard for truth compels me to say, that, as a general thing, it is rather slovenly. I ask pardon of our farmers, but believe it to be a fact, that in no other country but Wisconsin, would it be considered as approximating to the science of agriculture.

The causes are obvious, the excuse reasonable. First, they have attempted to cultivate too much land with very limited means; next, they have been deluded with the notion that wheat could be grown successfully for an indefinite period of time—that manuring, rotating crops, seeding down with timothy, clover, and other grasses, growing stock, flax, hemp, roots, &c., was altogether unnecessary. To surround a quarter section of land with a sod fence—break and sow it to wheat—harvest the same and stack it—plough the stubble once, and sow it again with wheat—thresh the previous crop and haul it to the Lake, was considered good farming in Rock County, continued from year to year; and hundreds confidently expected to win, by going it blind, in this very unscientific manner. And for a

few years it succeeded; but a short crop or two, with a depressed market, has brought them up all standing. The cry is now heard, what shall we do to be saved? And for the purpose of answering this satisfactorily, an Agricultural Society has been organized in this county within the past year; and we do hope that a different account from this will be given of us in a very short time. For I confidently believe, and it is the opinion of others, that with a system of farming adapted to our soil and climate, scientifically and thoroughly pursued, Rock County can be made to produce an amount equal to that of any other of its size in the State, or perhaps in the Union. Its capacity for growing all kinds of grain, roots, and grasses, is, in my opinion, equalled by but few, either in the Eastern or Western States.

Rock county is thirty miles in length from east to west, and twenty-four broad from north to south, comprising twenty townships of six miles square, each containing thirty-six sections of 640 acres, making 460,800 acres, or 2,880 farms of 160 acres each. Rock River runs through this county from the north, in a south-westerly direction, affording plenty of water-power, and with its numerous tributaries, presenting a large field for grazing and dairying. Let me say here, that we have an abundance of lime stone, producing lime of a superior quality; also good building stone.

For the purpose of showing the capacity of this county for production, we will suppose those 2,880 farms to be properly fenced and under a good state of cultivation, sixty acres in pasture and meadow, forty of timber, and sixty kept under the plough, in the following proportions and estimates of yield:—say 15 acres in wheat, at 25 bushels to the acre—10 acres oats, at 50 do.—10 acres barley, at 30 do.—15 acres corn, at 50 do.—5 acres flax, at 15 bushels seed and 1 ton of fibre to the acre—and 5 acres roots, at 250 bushels to the acre. Of Stock, say 10 cows, making 350 lbs. cheese to the cow, or 175 lbs. butter—100 sheep, shearing 3 lbs. wool per head, and averaging 25 lambs to the flock—1 ton of pork—half a ton of beef—1 horse and 2 head neat cattle to each farm for sale yearly. This calculation gives an aggregate of 1,380,000 bushels wheat, 1,440,000 bushels oats, 864,000 bushels barley, 2,160,000 bushels corn, 221,000 bushels flaxseed and 14,400 tons of fibre, 3,600,000 bushels roots, 10,080,000 lbs. cheese or 5,040,000 lbs. butter, 864,000 lbs. wool, 72,000 lambs, 2,880 tons pork, 1,440 tons beef, 2,880 horses, and 5,760 head of neat cattle, besides poultry, eggs, fruit, and culinary vegetables, in quantities to suit purchasers.

I shall not enter into an estimate of the value of this vast amount of produce, preferring to wait until it shall be grown, and the market value a shade or two higher than it is at present.

In estimating the yield per acre in the foregoing calculation I have been guided by the experience of our best farmers, and have the assurance that they have all

been realized, and some of them much greater; I have therefore no hesitancy, in view of an improved system of husbandry, rotation of crops, manuring, deep ploughing, improved implements, &c. in saying, that they may be exceeded, with the exception, perhaps, of the wheat crop, and even this has been realized in this county and much more. On the other hand, the average of the root crop is set altogether too low; if we except potatoes, it may be easily doubled or quadrupled.

It was generally believed, until within the last three years, that grasses could not be grown successfully, either on our prairies or oak openings; but within that time considerable attention has been paid to this important branch of farming, and with the most complete success; clover and timothy are the principal kinds of grass which have yet been grown, at least to any extent. In regard to those I have the testimony of several gentlemen who assure me that the yield will compare favorably with that of most of the eastern States; one and a half, two, and two and a half tons have been cut from the acre on our highest and driest prairies.

Mr. Eldred, of Johnstown, has fully tested the capacity of our prairies for dairying purposes; he has milked the past season 26 cows, making cheese mostly, and of a most excellent quality; we have been using it on our table for some time past, and finer, or better flavored, I have seldom seen or tasted.

His average from each cow, he informs me, is three hundred and fifty pounds of cheese, and a small quantity of butter.

His meadows, he assures me, yield equally as well as eastern meadows in the same latitude; his pasture afford as much feed, equally as nutritious, and continuing quite as late in the season.

Wool in small quantities is being grown in this county. Sheep do remarkably well, as does stock of all kinds, fattening readily, and yielding an average quantity and quality of wool. No country can boast of a climate better adapted to the health of sheep, as well as animals of all kinds.

This county is about equally divided into prairie and oak openings. There are no very large bodies of heavy timber, the most part is of that kind which requires two trees to make one rail cut; nevertheless, we manage to keep ten or twelve saw mills in operation the most of the time. A considerable portion of the timber, however, is brought down the river, from Jefferson County, in rafts.

There are some excellent breeds of swine in this county, although some of the kind that root up the third row of potatoes through a common rail fence, are yet found amongst us. And that race of Sucker Porkers, called "nine-mile-hogs," which it is necessary to soak in the spring to make them hold swill, is not yet entirely rooted out; but the present laudable effort on the part of our farmers to improve their breeds of swine, will soon place them on the list of things that were. This county must very soon produce large quantities of pork for exportation.

Fruit trees, particularly apples, pears, plums and cherries, thrive well with us, both on the prairies and in the openings; peaches, apricots and nectarines, are somewhat doubtful; currants, gooseberries, and strawberries, are perfectly at home with us; and we have only ourselves to blame if we have not a full supply of those delicious fruits.

We have no orchards of any considerable size, the attention of our people not having been turned to planting trees until a very late date—growing hedge-row, and money shaving, has been the absorbing business; but recently our folks have come to the conclusion, that planting orchards is of some consequence, and have entered into the business with a spirit and zeal that guarantees at no distant date, a full supply of luscious and health-securing fruit.

We have several very respectable nurseries in this county, which is an index of the increasing interest in the fruit-growing business. The past season has been very favorable to the planting of trees, they have made wood finely.

Respecting the cultivation of the grape, I am not prepared to speak positively, particularly on our prairies, as there has been, like almost every other branch of horticulture, but little attention paid to it. We have some vines growing in our village gardens; and where they have had the most common attention they grow well. I have tasted some fruit of excellent flavor, and have heard no complaint of that great curse of this fruit, the mildew. One gentleman who has paid some attention to their cultivation, assures me that there is not a doubt but they can be grown successfully both on the prairie and opening lands. That the vine grows well I know, but mine have not yet matured fruit, so I can say nothing as to their bearing qualities.

Manufacturing in this country is yet in its infancy; not a tithe of what we ought to have, or are capable of sustaining, being yet in existence among us.

There are at present in this county, twelve saw mills, six grist and flouring mills, three furnaces, two machine shops, one woollen factory, one oil mill, one flax mill, one platform and counter scale factory, six tin shops, two or three turning lathes for wood, four plough-making establishments, two fanning-mill shops, one hat and cap factory, three printing offices, with blacksmiths, cabinet-makers, shoemakers, carriagemakers, harnessmakers, &c., to meet the wants of the community nearly. We have also, one brewery and two distilleries—if that is a mark of progress.

There has been no meteorological register kept in this neighborhood that I am aware of; and as to the geology of our county, or our mineral resources, we know as little as Hottentots.

No analysis of our soil has as yet been made to my knowledge, therefore, of all that relates to its composition, or adaptation to the growth of particular kinds of crops, we are most gloriously ignorant.

I have just had some conversation with a gentleman, Mr. Thomas, of the town of Newark, who informs me that he has invented and patented a machine for pulling flax, which he has no doubt will do the business to perfection. He has some in process of building, and is so confident of their operating successfully, that he intends to sow fifty acres to flax, this spring, himself, which he would not do, of course, if he had to go through the old fashioned, back-aching operation of pulling it by hand. If Mr. Thomas's expectations are realized, it, with the recent improvements in the dressing and manufacturing of flax, will work a great revolution in the production of this article, and we may expect to see large quantities of it grown in Rock County, as well as other parts of the great and growing West.

Hoping you may, yet fearing that you will not, find any thing in this communication that will be of service to you, I subscribe myself your friend, and well wisher to the cause of General Improvement.

JAMES M. BURGESS.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

AGRICULTURE OF SAUK COUNTY.

Prairie Du Sac, December 31st, 1851.

Sir—You request to be furnished with some account of our county, Sauk, with general information, is received.

As to the early history of Sauk County little is known here. When I came to this county, in 1840, it was inhabited by the Winnebago Indians, who said that they had whipped the Sacs off, and that when they came here there was a large settlement of the Sacs on the lower end of Sauk Prairie. I have often examined the remains of their tillage there, and should suppose they raised corn in one lot of at least 400 acres; the town of Westfield is laid out on part of this ground, and the whole quantity of land, the 400 acres, is covered with well formed, regular, corn hills. In the vicinity are a number of irregular Indian mounds.

In building the Sauk mills, four miles from the villages of Westfield and Prairie du Sac, on the Honey Creek, I had occasion to haul off a few of the largest Indian mounds found there for the purpose of making a dam, as I found on opening one of them, that they were composed of a tough light colored clay, the rest of the ground surface being sandy, I was surprised to find that the mounds only were clay; as soon as I came to the level ground the clay disap-

peared, leaving in my mind the impression that the clay was brought there and deposited for some purpose. We found the skeleton of one man only, it was entire, but crumbled up soon after exposure. There was nothing else except a considerable number of spear and arrow flint heads very well formed.

The population of Sauk county, at the date of the last census, June 1850, was 4,372.

Sauk county is bounded on the east and south by the Wisconsin river, on the west by Richland county, and on the north by Adams county, and contains 1,044 square miles.

The soil near the river is generally sandy, but strong and quick, does not leach, bringing forward crops from its natural warmth rapidly; as the land recedes from the river it increases in strength and richness until black mould, with very little stiff clay soil; the subsoil is generally sand, and rock composed of mixture of lime and sand; there is not much clay subsoil, and that is sandy. The face of the county, with exception of the prairie, is hilly, say one-third fine level prairie, one-third handsomely undulating, the rest hilly; but the hills are principally rich black loam, and a great part of them susceptible of tillage.

Corn is the principal crop, average 40 bushels to the acre; oats are a heavy crop, averaging also 40 bushels; wheat in this county fills well, and is a good sample; the corn and oats cannot be surpassed; agriculture and tools generally good; cattle and horses plenty, but not much attention paid to improvement of stock; some few have commenced to improve.

Three years, out of eleven, only have produced good crops of winter wheat, owing to be killed out for want of snow sufficient to protect the roots from the February and March frosts and nipping winds; the three good years, there was plenty of snow. The remedy I have tried is early seeding, and sowing rather more seed to the acre than is customary here, say seven pecks to the acre, ploughing the seed in, if possible, and leaving the ground rough, as the rough sods breaks the cold wind from the small plant; also scattering litter, stable manure, or straw, on the wheat field, after the braird is well up; this I have practised successfully. About one-half of the county is well adapted for grazing, especially the hilly part, as the bluffs are well timbered, yielding rich grass, and we have as much marsh land as is necessary to make it a good grazing county; from the supply of hay for wintering, there can be no doubt of its being a better grazing county than cropping, and farmers are generally turning their attention to feeding and dairy stock.

The principal streams are the Wisconsin River, the Baraboo River, and the Honey Creek and several minor creeks.

The principal Prairies are Sauk and Spring Prairies, both noted for their beauty and fertility.

Horticulture as yet has not been much attended to, but the specimens of flowers and fruits already raised are really fine.

The principal market at present is the Wisconsin Pinery, distance sixty miles, which takes all we can raise; but the Wisconsin River will, now that steamers are running regularly in summer, take off every surplus.

All the potatoes we could spare, amounting to several thousand bushels, went down the river in arks last year, and found a ready market.

I remain, Sir, yours very truly,

HENRY B. STAINES.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

AGRICULTURE OF SHEBOYGAN COUNTY.

Sheboygan, December 31st, 1851.

Dear Sir—The village of Sheboygan is situated on a sandy elevation, about forty-three feet above the level of Lake Michigan. The sand extends down in horizontal beds about twenty feet, and exhibits the same phenomena that we might expect from the combined effects of ice and water—the different beds seem to mark great and distinct commotions in the then superincumbent waters. Some of these separate beds of sand are composed of an innumerable number of minor strata, which are bent and contorted in every possible direction; and are quite irregular in extent and thickness, exhibiting the same appearance that is seen in a section of the sand on the present lake shore, in the spring, when the pieces of ice have been melted that were at different times washed on shore, and buried in the sand. Below the sand is a stratified bed of clay, which is here seventy-eight feet in thickness. The strata are generally very thin, and divided by fine sand. Boulders are occasionally found in the clay. This clay makes excellent light-colored brick. Below the clay is carboniferous limestone, which is here ninety-eight feet below the surface of the ground, and fifty-five feet below the surface of the lake. This stone has, at our village, been penetrated one hundred feet with a view of obtaining an artesian well. No remarkable change was observed in the rock.

Leaving our town, and proceeding north, the sand bed becomes more shallow, and, finally, within two miles disappears, leaving the clay at the surface. At the light-house point, which is about one mile north, the surface of the rock is above the surface of, and extends out into the lake, and is anticlinial, the dip being to the N. W. and S. E. The surface of the rock is here polished and grooved, the

scratches generally running E. S. E. and W. N. W. The surface of the rock is again exposed about three miles north of this village, where the Pigeon River has removed the superincumbent clay. Here, too, the surface of the rock (which is about sixteen feet above, and one mile distant from the lake) is polished and grooved, the striæ having the same general direction as before mentioned. The whole northern part of the county, as far as my acquaintance goes, has this same bed of clay for a subsoil. There are no hills of any considerable height; and I do not know of any place where the limestone makes its appearance at the surface.

Going west from Sheboygan, the same sandy loam and clay soil is met, as before mentioned. At Sheboygan Falls, six miles from the lake, the limestone again makes its appearance in the bed of Sheboygan River. The surface of the rock which is in the neighborhood, of forty-five feet above the level of the lake, is also polished and grooved as at the two other points.

The next most notable feature in the surface of our county is best developed in the western part, about eighteen miles from this village, and consists of a range of hills (morains?) extending north and south, and provincially called "potash kettles." These hills are steep, conical, and from forty to one hundred and fifty feet in height, with deep indentations between, and are composed of a confused mass of sand, pebbles and rounded stone, principally carbonate of lime. These hills have been penetrated eighty-two feet in a perpendicular direction for water without success, the sand and gravel at the bottom being scarcely moist. This formation, in a much less degree, is found in various parts of the county, forming a dry limey soil, well adapted for agricultural purposes.

Going south from the village of Sheboygan, we cross the Sheboygan River, which is from twelve to fifteen feet in depth. The valley of this river is here about one mile wide, and through its whole extent contains a rich bed of fresh-water marl. Beyond the valley of this river, the same formation, as at our village, extends on the lake shore to Black River, which is about four miles distant. This stream comes from the south, and runs nearly parallel to the lake. The narrow strip of land lying between the river and lake, is either drifting sand or low ground; west of the river is high ground, not dissimilar to the rest of the county. The county generally is strewn over with boulders of coarse granite, &c. A few boulders of copper have been picked up in the drift, and also a few specimens of coral.

As to the Agricultural condition of the county, the Rev. H. Lyman has furnished me with the following statement:

"The first opportunity to make a safe judgment upon the agricultural condition of Sheboygan County, was presented in September, 1851, when its first Agricultural Fair was held upon that occasion; and in investigations preliminary thereto,

it appeared that while agricultural interests in all of their departments were in their infancy, yet it was an infancy full of life, a nascent stock foreshowing a sturdy maturity. In connection with the agricultural development of Sheboygan County, it should be remembered that while other sections of the State were found ready for the plough on the first year of settlement, and supplied with meadows rich in grasses, this county, with inconsiderable exceptions, was overcast with a heavy forest. This cause has retarded the introduction and increase of some animals, and rendered the early introduction of small cattle unsafe.

"One of the established facts is, that the soil of this county fits it for the production of wheat—so that while in that staple it surpasses some portions of the State, it is in the same department second to none. Other cereal grains find here a generous soil, and return a generous reward to the cultivator.

"Flax is newly engaging the attention of agriculturists; and soil, and all circumstances, are believed to favor its production.

"Orchards are numerous, but so young that no supplies are as yet furnished by them. It can only be said that apple trees present a thrifty appearance, and a few fine apples have been gathered.

Animals.—"Horses are neither so numerous or so fine as are shown in other parts of the State.

"Bovine Cattle, of good blood, are numerous. Several good dairies are established in the county, though none upon a scale relatively extensive. This branch of agriculture must in future rank among the cardinal interests of the county.

"Sheep.—Their forest enemies have kept them back; yet a few flocks are found, and the best breeds have been introduced.

"Swine.—Great interest was excited at the late Fair by the exhibition of these animals; and it may be said that the county abounds with the best breeds of swine.

"Poultry.—Attention has been turned to the rearing of Poultry. The Dorking is the prevalent variety; recently, however, the Shanghais have been introduced.

"The spirit of our agriculturists is hopeful and resolute in a high degree; they are encouraged by the wide range and abundant product of their industry, and determined to avail themselves of every improvement in machinery, in chemistry, and in modes of operating to perfect the branch of industry to which they belong. Agricultural papers have a wide circulation among them."

With my best wishes for the success and prosperity of the State Agricultural Society.

I am, yours truly,

J. J. BROWN.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

AGRICULTURE OF ST. CROIX COUNTY.

Dear Sir--In answer to your inquiries I will proceed in the order in which your interrogatories are put, and give you such information I am able to on the subject. Having been a resident of the county but three years, I cannot go into full details.

The first American settlements were made in St. Croix county, at St. Croix Falls, on the St. Croix river, for lumbering purposes, in 1838 or 1839. There were, however, a few French families living on St. Croix Lake, at the mouth of Willow River, previous to that time.

The present population does not fall below five thousand, and is rapidly increasing.

It is one of the largest counties in the State, containing about 116 townships, or 1176 square miles, and is bounded as follows, viz.: Beginning on the western boundary line of the State opposite the mouth of Rush River, running thence due east to range line between fourteen and fifteen west; thence due north on said range line to the township line between thirty one and thirty two north; thence due east on said line to the range line between range eleven and twelve west; thence due north on said range line to township line, between townships forty and forty one north; thence due west to the western boundary of the State; thence southerly along said boundary line to the place of beginning.

It will be seen by reference to the map of the State of Wisconsin that the western boundary of this county lies along the Mississippi and St. Croix rivers, a distance of about 175 miles, one hundred miles of which boundary is on navigable waters for steam boats six and a half or seven months in the year. In addition to this water communication we have abundance of hydraulic power on Rush and Kinnikinnick rivers, in the south part of the county, and on Willow and Apple rivers in the centre; all running from east to west and emptying into the Mississippi and St. Croix Rivers. The St. Croix is navigable to St. Croix Falls, about seventy miles above the point where it empties into the Mississippi.

The surface is generally undulating. South of St. Croix Falls it is diversified with prairie openings and timbered land. North of the Falls it is mostly timbered land.

The timber in the south part of the county, except upon the bottoms, is mostly white and burr oak; the timber on the bottom lands consists of the usual varieties found on the Upper Mississippi bottoms. In the northern part of the county the timber consists of sugar maple, white and black ash, white and red elm, butternut, white and black oak, red and black birch, some hickory, some tamarack and cedar. The streams and lakes are mostly belted with pine in strips of from one to three miles wide.

The soil is composed of a black sandy loam, but its constituent elements, I believe, have never yet been ascertained by analyses. The southern part of the county is underlaid with sand stone, and the northern part with trap rock. Some fine lime stone quarries have been discovered and worked to a considerable extent for home use.

Crops.—Corn is a sure crop. The yellow and white dent corn, such as is raised in Illinois, is the kind most to be relied on; the average yield per acre is about fifty or sixty bushels, and it is cultivated mostly with the plough.

Winter Wheat is also a sure crop, the berry being remarkably plump and bright; the average yield per acre is about thirty-five bushels.

Oats are cultivated to a considerable extent, and sixty bushels to the acre, weighing thirty-seven pounds to the bushel, is a common crop.

Potatoes do well on dry sandy soils; in marsh clay soils they are very apt to rot. Three hundred bushels per acre is the usual crop.

I am so little acquainted with Agricultural pursuits, that I am unable to give the method of cultivation, or its defects and remedies. The county is so diversified that persons, by suitably choosing their locations, can turn their attention to any branch of husbandry they may wish, and make a very profitable business of it.

Stock.—So recently has attention been turned to farming in this county (only about four years) that we have no blooded stock—farmers bringing only such as were absolutely necessary for work and family use. No sheep have been introduced, and at present I think it would be an unprofitable speculation, in consequence of the abundance of wolves and other wild animals; although I believe when the county is sufficiently inhabited to drive off these animals, sheep will do remarkably well.

Horticulture.—Only within the last two years has any attention been given to fruit growing, and what few trees have been planted appear to be doing remarkably well.

Markets.—Our lumbering interests make a home market for every thing the farmer can produce. The prices for the last three years have been as follows: Corn, from 75 cents to one dollar. Oats, from 40 to 75 cents. Potatoes, from 50 cents to one dollar per bushel. Butter, from 15 to 30 cents per pound. Pork in the hog, 6 to 8 cents per pound. Chickens, 25 cents each. Eggs, from 20 to 50 cents per dozen.

Manufactures.—Our manufactures are at present all confined to lumber. About sixteen millions feet of sawed lumber are annually sent to St. Louis and intermediate points for market; valued at about $192,000. We also send twice as much more in the log, worth about seven dollars per thousand at the market.

I believe that no county in the State presents greater inducements for the residence of the farmer than St. Croix County. Probably not a thirtieth part enough is produced to supply the demand, and with the rapid influx of population, and the increase of the lumbering and other interests, we shall be obliged to depend mainly on that part of our own State bordering on the Mississippi River and Upper Illinois, and Missouri, for years to come for our supplies, which will keep up the prices over and above the cost of purchase and transportation.

No county in the State is better supplied with pure soft water than St. Croix county, which, together with the healthfulness of the location, the remarkable adaptation of soil to climate, and its direct communication with the south; and being, in fact, the head of steam boat navigation. Its abundance of game—its fine streams and beautiful lakes, well supplied with the best varieties of fish—its home market, at good prices, for every thing the farmer can produce—make it one of the most desirable counties for a permanent residence within the limits of the State.

At some future time I will give you a more elaborate detail of facts.

Yours,

OTIS HOYT.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

AGRICULTURE OF WALWORTH COUNTY.

Geneva, December 30th, 1851.

Its Settlement and Inhabitants.—The first white settlements in this county were made in the year 1836, at Geneva, Spring Prairie, and Troy, by immigrants principally from New York and New England. In the next following year settlements were commenced at Delavan and Whitewater, on Bigfoot, Turtle, Sugar Creek, and Gardiner's Prairies, and at other places. So rapid was the influx of population, tempted by the beauty and fertility of the country, that when lands in this county were offered at public sale at Milwaukee, in February, 1839, nearly all the land desirable for agricultural purposes was entered. Since that time, all that remained, with the exception of a few scattering forty or eighty acre lots, situated on wet marshes, or sterile "knobs," (small, sharp hills so called,) has been purchased.

The population is chiefly of New York and New England origin, interspersed with a sprinkling from the inhabitants of various other States in the Union, together with some Irish, Germans, and a very few Norwegians. The controlling and almost entire influence and tone of character, political, social and religious,

gious, are American. The people are as sober, industrious, intelligent, moral and law-abiding, as in any other portion of the State, or perhaps of the Union. Much attention is given to education, intellectual and moral; and the fact that Walworth county orders have always been on a par with specie, speaks favorably for the honesty, and pecuniary ability of the inhabitants. The population in 1850, was 17,866—in 1838, it was 1,019—in 1840, 2,611—in 1842, 4,618—in 1845, (by estimate,) 10,000—and in 1847, it was 15,039.

Area, Boundaries, Surface, &c.—It is twenty-four miles square, embracing an area of 576 square miles, and is composed of sixteen surveyed townships, each of which constitutes an organized town, which with Elkhorn, the county seat, composed of four contiguous sections in the centre of the county, make in all seventeen towns. It is bounded on the north by Waukesha and Jefferson counties, on the east by Racine and Kenosha, on the south by the State of Illinois, and on the West by Rock County. Its southern limit is in north latitude 42½ degrees. It is situated nearly midway between Lake Michigan and Rock River, and presents a pleasing variety of surface and scenery. Its surface is for the most part undulating, though often level or sloping. Here it swells into gentle hills, and there it stretches away in broad levels, or slight inclinations. This graceful outline of surface generally prevails, but in a few localities, particularly in the south-eastern portion of the county, the land is in many places broken by knobs, or small, irregular, and abrupt hills. A chain of these, from one half to one mile wide, enters the county from the north, a little west of the centre line, and runs in a south-westerly direction across the north-western portion of the county. A large portion of the hills are arable land, of a warm and prolific soil, and all will afford good pasturage.

There are some marshes in all portions of the county, most of which afford excellent meadows and are in present use; while the residue can, for the most part, be reclaimed by draining. The bottoms along the streams also furnish excellent meadow land, while much of them is of the richest quality for tillage.

Probably it may be safely affirmed of Walworth County, that it has less waste land, and, for its size, more that is adapted to agricultural purposes than any other in the State. Indeed, it would be difficult to find, in the aggregate, half a dozen sections of waste land in the county.

Soil.—This varies with the localities. On the prairie and bottom lands it is either a dark vegetable mould, or muck, varying from two to four feet in depth. In the heavily timbered land it is loam, covered more or less deeply with decayed vegetation. In the white and black oak "openings," it is a light clay, and among the burr oaks it partakes largely of the ingredients of the prairie soil, mixed however with more sand and loam. This county presents, throughout every portion of it, a choice and desirable variety in its soil, adapting it to the various pursuits

of agriculture. Whilst it is peculiarly well adapted to the raising of grains, roots, fruits and vines, it is also well fitted for the rearing of cattle, sheep and horses.

Lakes, Streams, Woods, and Prairies.—There are in this county many small and beautiful lakes, the largest of which are Geneva lake in the southern, and Delavan, or Swan lake, in the south-western part of the county. The former is a lovely sheet of water, principally fed by springs, and is of great clearness, depth and purity. It is about nine miles long, by from three-quarter to one and a half miles broad, and is indented with bays, headlands, and woody bluffs. On the north side the banks rise abruptly, clothed with a heavy forest timber, whilst on the south side the oak openings and native meadows, for the most part, slope gently to the water's edge. It is encircled with a bright beach of sand and gravel, except where interrupted by the jutting beds of dark boulders.

Geneva Outlet, sometimes called Whitewater, issues from the eastern extremity of Geneva Lake, at the site of the village of that name, and flows north easterly, receiving in its course the waters of Lake Como, Ore Creek, and other tributaries, and empties into the Fox River (of the south) at Burlington, Racine county. Sugar Creek rises a few miles north-west from the centre of the county, runs in an easterly direction gradually inclining to the south, and unites its waters with Geneva Outlet, just above Burlington. Honey Creek has its rise a little north of the sources of Sugar Creek, and after flowing east, through both the Troys, to near the eastern line of the county, turns southward and joins its waters with those of Sugar Creek, a little above their junction with Geneva Outlet. Turtle Creek rises in the north-western part of the county, in a small lake of that name, and runs nearly south by the village of Delavan, there receiving the Outlet of Delavan Lake, and thence flows in a south-westerly direction, passing through Rock county, into Rock River at Beloit. Whitewater Creek also has its rise in the north-western portion of the county, runs north-westerly through Whitewater village, passes into Jefferson County, and empties its waters into Bark River. All these streams have many small tributaries; besides which, there are many brooks and rivulets which flow into the lakes. Numerous springs are found in some portions of the county, many of which form small streams. Water of an excellent quality is found in all parts by digging, usually from fifteen to thirty feet; and seldom is it necessary for that purpose to dig over fifty feet.

The greater portion of this county consisted originally of oak openings of the different varieties found in this State. There, are, however, many groves of timber, or heavily wooded lands in different parts of the county. The largest of these is "Geneva Woods," situated on the north side of Geneva Lake, and is four miles long by one and a half miles broad. The main body of the timber consists of white and black oak, interspersed with the other native varieties. It also, in many parts, abounds with the sugar maple, affording many fine sugar orchards,

and interspersed throughout are to be found the ash, elm, hickory, black walnut, butter-nut, cherry, baswood or linden, and ironwood tree. Blackberries abound in great abundance, and some grapes are found. This description will generally apply to all the groves of timber in this county.

There are from twelve to fifteen prairies in this county, the most of which are small or of moderate size, and all are of great beauty and fertility. The most noted are Spring, Gardiner's, Bigfoot, and Turtle prairies. The eastern portions of Rock and Jefferson prairies, also lie within the limits of this county. A more uniform or desirable variety of prairie, timber and openings, cannot probably be found, than is presented in this county; and it is generally well watered.

Villages, Mills, Indian Mounds, &c.—There are five principal villages in this county: Geneva, in the south-east; Delavan, in the south-west; Whitewater, in the north-west; East Troy, in the north-east; and Elkhorn, in the centre—which latter is the county seat. The three former have a population of about 700 each, and the two latter about 300. All, except Elkhorn, have a good and improved water-power; and at that place a steam flouring mill has just been erected.

There are numerous mill sites in Walworth County, most of which are improved, affording an abundant supply of water-power for the wants of the inhabitants. There are numerous grist, flouring and saw mills, throughout the county, and a few carding machines and clothing works. A small woollen factory is in process of erection a little below Geneva village. At Whitewater there is a machine shop and numerous turning lathes, and other small machinery are in operation in different parts of the county.

Some Indian mounds, or earth works, are to be found in Geneva village, and in other localities around Geneva Lake. At the above place, are circular mounds, longitudinal embankments, and two specimens of earthwork in the form of lizards, each forty feet long. On a hill between Geneva Bay and Duck Lake, a little east of the road leading to Delavan, may be seen an earthwork in the form of an Indian's bow and arrow. The arch of the bow is about fifty feet, and the arrow lies across it, pointing towards the bay. Arrow-heads and stone axes, have been frequently found. A fine specimen of the latter, and also of chain coral, found in this county, have been deposited in the cabinet of the Wisconsin University.

Agricultural Products, Dairy and Grasses.—Wheat growing has hitherto been the chief business of the farmers of Walworth County. But the recent failures in this crop, and the low price it has brought in market for the two past seasons, have shaken their confidence in it as a leading pursuit; and they are now anxiously engaged in the inquiry as to a change in their course of husbandry, and what offers the fairest chances of success. Intelligent farmers are convinced that they have devoted themselves too exclusively to this branch of agriculture, and that they have not been sufficiently careful to pursue those means

necessary to ensure a good crop. The present high prices for pork and horses, and the comparatively good prices for cattle, butter, cheese, sheep, wool, and swine, as compared with the low price of wheat, satisfies them that they have been greatly the losers by cultivating the latter to the neglect of the former; especially as the blight and the killing out of wheat by the effect of frost, renders it so uncertain a crop.

It is evident that wheat-growing should never again, in this country, be so exclusively pursued as it has been; but still it should be continued as an important and necessary branch of agricultural pursuit, and one, which if properly conducted, can be made a source of profit. To this end, the most obvious means are: First, the procuring from abroad, pure and wholesome seed of the best varieties, as ours, especially spring wheat, has become deteriorated by blight and repeated sowing. Second, summer-fallowing and rotation of crops, seldom or never sowing wheat after wheat. Third, deep and thorough ploughing and pulverizing of the soil, instead of barely skimming it, as is too often practised. Fourth, drilling in, instead of sowing on the surface, and using the roller, especially on winter wheat. Fifth, by the use of appropriate manures, particularly on clayey and sandy soils. By a thorough and careful mode of agriculture, it is believed that wheat-growing may yet be a profitable crop to the Wisconsin farmer. As proof that this may be so, it may not be improper to remark, that one farmer in this county raised upwards of thirty-three bushels of winter wheat, per acre, last summer.

Large quantities of oats are raised in this county, and it is uniformly a safe and abundant crop. Corn usually does well, the dent being generally raised on the black soils, and the Eastern varieties on the lighter. Barley is somewhat cultivated, and is usually a good crop. Considerable quantities of broom corn are annually raised in Troy, in this county. It grows luxuriantly and yields largely; and is believed to be as profitable as the average farming pursuits. The drawbacks from the valueableness of this crop are, the very limited home market, its great bulk, and the expense of transportation to an Eastern market. Very little rye or flax is cultivated. It is to be hoped that more attention will hereafter be given to cultivating the latter, as it doubtless can be made a permanent source of wealth. Peas and beans have been cultivated very little in the field. The former, when raised, have been much injured by the insect or bug in the pea. Potatoes in former years yielded plentifully, but the rot has injured them more or less for the last three or four years, and the past season occasioned an almost entire failure of this crop. Turnips, ruta bagas, vines, and garden vegetables, flourish well.

The average yield of wheat per acre is from twelve to twenty bushels; of corn (shelled) from thirty to fifty; of oats, from thirty to fifty; and of barley, from twenty-five to thirty.

There are a few good dairies in this county, but none on a large scale. The great obstacle to the successful prosecution of this business is, the lack of tame or cultivated grasses for fall feed. Until this defect is remedied, as it easily may be, the shortness of the dairy season from the early decay of the native grasses, will discourage and defeat all successful exertion towards this object. A little forecast, labor, and perseverance, would soon make the dairy business in Wisconsin both successful and profitable.

Considerable attention begins to be bestowed in this county upon the cultivation of grasses, particularly timothy, red-top and clover. Last year there was in this vicinity a great scarcity of grass seed of all kinds; but this season there is an abundant supply of timothy seed of domestic growth, and some has been barreled for shipment to an Eastern market. And I see no good reason why both timothy and clover seed may not be profitably raised among us for export. A second crop of clover can be grown each season for seed, especially if quickened by a sprinkling of gypsum or plaster, which can thus doubtless be profitably employed even in Wisconsin. A crop of clover seed would bring, in market, nearly or quite as much as a crop of wheat from the same number of acres, and with an outlay of not more than one-fourth the labor. Both timothy and clover can be threshed in a machine like grain, and then used as fodder for stock; thus saving the seed. The experience of farmers in this county is, that the older the tillage, the better is the yield of grass; and that the second seeding forms a more uniform and compact turf, is of finer quality, and of a better yield than the first. The ground should be seeded heavily, in the lattter part of winter or early spring; and if sown with grain, should be rolled. A mixture of timothy and clover produces the greatest yield; and as an article of fodder is certainly more nutritious, especially for horses, than native hay. The red-top has been successfully introduced here on some of our bottom lands, on the unbroken soil, by being sown upon the snow. Timothy has also been introduced in the same way. In two or three years they will supplant the native grass, and yield abundantly. Some of our farmers are sowing white clover seed on their pastures, and it is believed the result will justify the labor and expense. On the clayey and light soils, plaster, as an aliment or manure, would doubtless be used with profit. I have dwelt the longer on this subject, as I am convinced that the prosperity of the farming interest in Wisconsin is dependent more on the cultivation of grass than of grain, especially of wheat, as the prime staple.

Horses, Neat Stock and Sheep.—Considerable attention has been given to the introduction of some of the best breeds of horses, particularly for the road and draft. This county can show several fine specimens of studs, and many horses of great beauty and value.

Sufficient attention does not seem to have been devoted to the improvement

of neat stock. Very few, if any, of the pure improved breeds have been introduced. There are some crosses of natives with improved cattle, but to no great extent. It is believed the farmers of this county would find it to their benefit to give more attention to this interest.

Many flocks of sheep have been introduced, and some of a very excellent quality. Most of the farmers have more or less sheep, and are earnestly directing their attention to the increase of their flocks, both in number and quality. Mr. C. M. Goodsell, late of Geneva, was the first to introduce some very valuable sheep from the flock of Mr. Jewett, of Vermont. More recently, Mr. Charles H. Smedley, of Hudson, has imported a large number of bucks, and some ewes of the choicest breeds from the best flocks in Addison County, Vermont, where probably as good sheep are to be found as in any part of the Union. He has found for them a very ready sale, but has still on hand some choice specimens, and intends to bring on more. Farmers here are convinced that wool for this country is a far better staple than wheat, and are so shaping their business as to conform to their convictions.

Horticulture and Fruits.—Considerable attention is given to horticulture by many of the inhabitants of this county; but the garden here, as elsewhere, is too apt to be neglected by most farmers.

There are in this county two excellent Nurseries. That of Mr. Bell, of Gardiner's Prairie, is the oldest, and is rich in its varieties; but Mr. Phœnix, of Delavan, has one which is little, if any, inferior. They are both skilful nurserymen and gardeners, as any one will see who visits their beautiful grounds. We would recommend them to the citizens of Wisconsin, as being able to supply, on reasonable terms, as great a variety of fruits, shrubs and plants, as any other establishments of the kind in the State. Their good taste and enterprize is manifest in the numerous orchards and fruit trees of various kinds to be seen throughout the county, giving promise in a few years of an abundance of fruit. The farmers generally are making atonement for past neglect in this particular, by devoting much more money and labor to it than heretofore. Apples, plums, and cherries, in all their varieties, flourish and produce well, as also do the Isabella and Catawba grape. Pears and quinces appear to succeed well; but upon the peach no reliance can be placed. The climate seems to be uncongenial to the fruit bearing of this sensitive and delicate tree, although it flourishes well in limb and leaf. Some fine specimens of the peach have been raised here; but of late years it has proved almost wholly unproductive, and will not warrant general culture.

Markets, Roads, &c.—Milwaukee, Racine and Kenosha, are the natural and principal markets for the products of this county. The population, on an average, are from thirty to forty miles distant from these points, which can be reached with loaded teams from all parts of the county in from one to one and a

day's drive. Teams are usually loaded both ways, bringing on their return pine lumber, or goods of various kinds, all of which are received through the above ports. A plank road leading west from Racine, has been constructed through this county to Delavan, with a branch diverging south-west towards Geneva, as far as Burlington. Two plank roads from Milwaukee have also been constructed to near the eastern limit of this county, and will doubtless be extended into, if not through the same. One also from Kenosha, leading in a south-westerly direction, has been built as far as Fox River, and it is proposed to continue it into the southern parts of the county, with a branch towards the centre. The rail-road west from Milwaukee will pass through Whitewater, and the north-western portion of this county. The common roads, for a new country, are quite good, the ground being generally favorable, and the material for their construction usually convenient and abundant; and considerable labor is annually bestowed upon them. The facilities to market for the farmers of this county are good, and add greatly to the value of land, and the wealth and prosperity of the county.

On the whole, Walworth County, like the most of Wisconsin, has all the elements of agricultural wealth. If our farmers would perseveringly turn their attention and industry to the dairy, the growing of wool and flax, the rearing of horses, cattle and swine—if they would have the prudence and courage to do without what they do not really need, and are not sure they can pay for when due—if they would buy less and sell more, and instead of making haste to be rich, be content with the slow but sure returns of agricultural thrift, they would in a few years, for the most part, feel little of the pressure of hard times, and would be in comfortable, and many of them, in affluent circumstances.

Statistics.—The following statistics compiled from the *Western Star*, may be of some use and interest. I cannot vouch for their correctness. They purport to be taken from the census of 1850. Number of farms in Walworth County, 2,001; number of acres embraced in same, 254,286; number of acres improved, 106,460; number of acres unimproved, 147,826; number of families, 3,042; total value of farms $2,695,994; average value of each farm, $1,347; average value of real estate to each family $886; average of real and personal to each family $1,327. The town of Elkhorn, comprising four sections, and the village of Elkhorn, is not included in the above.

The following is taken from the assessment rolls of the several towns, after being equalized by the supervisors in the year 1851:

Total number of acres assessed, 336,100; total valuation of same, $1,505,352; average value per acre as assessed, $4 47.

C. M. BAKER.

AGRICULTURE OF WALWORTH COUNTY.

GENEVA, December 30th, 1851.

DEAR SIR—I received your letter at a time when other cares and duties were occupying my attention, and have consequently delayed my response to a period so late as to preclude the possibility of noticing many topics of interest to the agriculturists of our county, or of suitably discussing those to which reference is made.

It is not to be denied that the agricultural interests of our county are greatly depressed. Our staple is wheat, and three successive failures of this crop have deprived us of our chief resource.

Another cause of the depression of this interest is the prevailing indebtedness of the farmers. Most of those who settled in this county at an early day possessed but limited means, and good crops and high prices for the first few years tempted them into this vortex. Pay-day finally came, and with it short crops and low prices—creditors became importunate, and debtors were forced into the loan market at a time when an act of most impolitic legislation had left capital, without restraint, to prey upon the vitals of labor. Homesteads were involved at rates of interest varying from fifteen to fifty per cent. The desperation of hope, on the part of the borrower, was only equalled by the exultation of avarice on the part of the lender. So far from realizing the relief anticipated, the debtor now finds himself less able to pay the usurer than he originally was to pay the merchant, whose importunity, in most instances, forced them into the dilemma. The result is a cheerless present and a hopeless future. California seems the only resource, and to that gilded region many a Walworth county farmer is preparing to flee as to a city of refuge.

The formation of the county is undulating. It has no mountains and very few rugged bluffs or steep hills. Probably no county in the State presents a more fortunate combination of prairie and timber, interspersed with rivulets and springs, precisely suited to the convenience of the farmer. There is little low or wet land in this county, and most of this, though rejected as refuse in the first settlement, has since been found to be our most valuable land. Heretofore these sloughs have been our exclusive resort for hay; when suitably drained, they are found arable in a high degree, and produce most crops in great abundance.

Many of our farmers are determined to work out a new course for the future. Wheat growing, as an exclusive crop, is abandoned, and large fields are being sown with tame grasses preparatory to a more general rearing of stock. The experiments thus far warrant the belief, that our soil will produce the grasses in as

great abundance as any other crop, and they are not as liable to a failure. Already animals of a very choice breed have been introduced.

No one now thinks of fattening any but the most highly improved breeds of hogs; the ancient animal, whose forlorn appearance begot the motto "root hog-ordie," and which instead of a yoke was wont to be restrained by a knob tied in the end of his tail, has neither a foot-hold nor a rooting-place in our midst.

Of Sheep, we have some of the most approved qualities. Mr. Smedley, of Hudson, in our county, has imported several flocks from Vermont within the last few years, and with him the last flock is always the best. Our worthy President must look well to his honors in this line, as Mr. Smedley is surely after him at the next Fair.

We have some excellent Cattle, but mostly of the common stock. Mr. Bunker, of Troy, took the premium at our County Fair on what he called a thorough Devon bull; I very much doubt his purity, however, and so told him at the time. The only thorough animal of this kind in our county, so far as I know, is a Durham bull belonging to Mr. Winne, of Elkhorn, from the magnificent herd of Mr. Tears, in McHenry county, Illinois. This animal, as well as all of Mr. Tears' original stock, was brought from Maryland, and was registered on the "Herd book," an honor conceded to none but thoroughbreds.

In the line of Horses there is a growing and enlightened taste. I believe we have no "thoroughbreds," using that term in its technical sense, though most of our better class horses have an intermixture of thorough breeding. The breed most highly approved with us is the "Henry." This was an animal brought into our county in 1846, by James Biggart, of Vermont, and stood that season in Geneva. He was then taken to Chicago, and passed into the hands of Denis S. Cady, Esq. who stood him one season in Chicago, and then brought him to Milwaukee, where he stood for mares until last winter, when he was sold and taken to Peoria, Illinois. Henry was raised in Washington county, N. Y. by Mr. Hill, a horse-breeder of high standing, and extensively known among all admirers of this noble animal. He is now nineteen years old. He is a bright bay, bold and courageous in his aspect, exceedingly mild in his disposition, very vivacious in his temperament, and weighs, when under "fit," 1235 lbs. He is admirably adapted to the draught, and trotted his mile in Chicago, at the time Mr. Biggart sold him, in less than three minutes. His stock is universally fine, and fleet roadsters. Mr. Biggart has a colt from him, a stallion, now eight years old, that trotted last season on Long Island in the "forties." Those who may be desirous of examining this breed will find an exquisite specimen at the stables of Apollos Hastings, Esq., in Geneva. The animal to which I refer will be four years old in the spring, of a bright bay, and in his appearance surpasses even the old horse. Mr. H. has also a chestnut stallion out of Henry, and a Kentucky

mare, five years next spring. Mr. Spaffard also, of Geneva, has a bay stallion from Henry, and a strong common mare, that has already trotted his mile in three minutes and a half. There is one question which, in the midst of the prevailing mania for fine horses, I hope some of your correspondents who are competent to the task will discuss; that question is, the comparative utility of the mule as an animal for the plough and draught. It is said that this animal works as well at two years of age as the horse at four years of age, and continues to thirty years as well as the horse to fifteen years. That he is not half as liable to disease, and that it costs only about half as much to shoe and feed him. Add to this, that he is capable of drawing or carrying the horse's load, and then tell us why he is not precisely the animal our farmers need.

For information upon some other points of interest to the agriculturist, I transmit the following note, prepared by Dr. Lewis N. Wood, of our county:

"Wheat, in Walworth county, has been a partial failure in crop during the past three or four years. The winter wheat has been liable to rust, and the spring wheat has been liable to a disease known among farmers by the name of blight; these diseases have materially lessened the quantity and quality of the wheat crop. They first manifested themselves on the prairie lands, and more recently on the opening land. Lands that have been longest cultivated seem to be the most uncertain in producing a crop of wheat, yet some lands recently broken up, and even some entirely new, excepting the first crop, have been visited by both rust and blight. Some have attributed the cause of the latter to a change in the conditions of the atmosphere from distant and unknown causes, and others have considered that the atmosphere was sufficiently charged with a poisonous principle emanating from the wheat on old grounds to deteriorate the wheat growing on the new grounds. The cause of the injury to wheat growing on the old grounds, is undoubtedly referable to the exhaustion by frequent cropping, of the free organic agents which are necessary to perfect a crop of healthy straw and wheat. Grass cropping and pasturing may restore those agents. The average quantity of good healthy wheat per acre is from twenty to twenty-five bushels.

"Oats have continued to yield from forty to sixty bushels per acre, since the first settlement of the county, and are a very certain crop.

"Corn, too, is a very certain crop, and with good cultivation will yield from forty to sixty bushels per acre. The variety called 'dent' has, in a great measure, superceded the eastern kinds.

"Owing to the fact that farmers have heretofore relied mainly upon the wheat crop which has now so nearly failed in this county, oats and corn must become crops of more importance than formerly, for the purpose of fattening pork and feeding stock.

"The raising of Stock has been very much neglected heretofore, but will here-

after claim more attention as a profitable employment for the farmer. Timothy grass, called by Yankees 'Herd's grass,' yields very well on prairie soil, contrary to the predictions of those whose eastern lands produced it as a principal crop. The first crop of timothy grass on prairie soil has generally been thin, and more or less in bunches; but when such has been replowed and resowed with timothy seed, the succeeding crops have been more thick and uniform, producing more and better hay. It is hoped the farmers of this country will satisfy themselves of the truth of this, by experiment, for the general and increasing failure of the wheat crop, makes it necessary that a different course be had by farmers in regard to future cropping.

"I am the more confident in these remarks, from the success which has attended my own efforts in raising that grass. I have cut yearly from twenty to fifty tons averaging from one and one-half to two and one-fourth tons per acre.

"The early attention bestowed upon the cultivation of Fruit trees in this county, promises to be of great advantage, utility, and comfort, to the inhabitants. There are several good Nurseries in the county, and choice fruit can easily be procured."

Hoping that these hasty thoughts may not be unacceptable, and that your efforts to elevate the condition of agriculture will be triumphantly successful.

I am, yours truly,

E. ESTABROOK.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

AGRICULTURE OF WASHINGTON COUNTY.

Washington county is what may be called, for Wisconsin, a heavily timbered county; oak, maple, beech, ash, basswood, elm, &c., are abundant. The surface is gently rolling, and living springs and streams abound. About one-half of the county has a subsoil of gravel, with a rich alluvial mold for a topsoil. The other, and northern half, has a reddish clay loam for a subsoil, with a good topsoil, but not so deep or fertile as that found upon the gravel. The loam itself, however, seems to have all the elements of fertility, easily disintegrates, and makes, when well ploughed, a very fertile and permanent soil. This clay, when thrown up from a depth of twenty feet, will grow vines, wheat and corn, with luxuriance.

Wheat has been a better crop in this county than in any other part of the State. This arises from the protection afforded by the standing timber, and

from the fact, that our farmers content themselves with small farms, and cultivate them well. Our hardy German farmers—who constitute a large majority—have rarely more than forty acres under cultivation: but every root, stick and stone, is picked up, and the ground thoroughly broken up.

Fruit trees seem to grow well in all parts of the county, though there are as yet no Orchards of sufficient age to enable us to ascertain satisfactorily our advantages for fruit growing. I have no question, however, but that we shall be able to compete with any other portion of the State.

The cultivated grasses grow remarkably well here—in fact, better than I have seen elsewhere in the State. Hence this county, when more lands are brought under the plough, will offer as great inducements for stock-raising as for tillage and horticulture.

The principal market town is Ozaukee, a thriving place, of some twelve to fifteen thousand population. This is a regular port for the lines of steamers and propellers; and with two good piers, and with sufficient warehouse facilities, offers as good a market for produce as can be found at any other Lake port. Grafton, Cedarburg, and West Bend, are thriving villages, being all situated upon excellent water-powers.

The only improved stock that I know of, was brought into the county last year by Judge Larrabee: a Durham bull and two heifers. They are sired by an imported bull, Hazlewood, dam Susan: and Susan by Prince William, out of a Patten cow. They are fine animals, and will, I doubt not, be worthy of the first premium at the next Fair.

There are three Nurseries in the county, at Ozaukee, Grafton, and Newberg. These, however, do not answer the demand. Large quantities of fruit trees have been brought from the Eastern Nurseries for the last four years, and have met with a ready sale.

Yours truly,

R. L. S.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

AGRICULTURE OF WAUKESHA COUNTY.

Having been unable to procure any statements of the agricultural condition of Waukesha county, the following remarks by a gentleman residing in another State, and who passed over that county, are inserted:

"I am of the opinion, that all the clay-soil we passed over between Milwaukeee and Eagle Prairie, is good for wheat: but the prairies seem to have rather

too light a soil—perhaps for want of some mineral ingredient. If the subsoil could be reached with a plough, and turned up so as to mix it with the surface soil, I think it would improve it by furnishing the lacking mineral matter. And if straw was spread over the ground, as soon as the wheat is sown, it would perhaps prevent its being winter-killed. We find many advantages from the use of the drill. The wheat is all covered the same depth, and it comes up evenly at the bottom of a little furrow, so that the soil during winter, instead of moving from the plants, runs down towards them, and thus prevents them 'freezing out.'

"I saw McCormick's reaping machines generally in use; but we prefer Hussey's as being better adapted for general purposes. It is not so liable to get out of order, and can be raised or lowered to suit the lodged or standing grain. The knives can be taken out, ground, and replaced without expense; whereas, when McCormick's sickles get dull, they must be replaced with new ones.

"I think the farmers of that part of the State that I saw, had better sow less wheat and grow more wool; as the soil is well adapted to grass—and just as fine wool can be raised in Wisconsin as in any other State. Sheep would cost but little in the summer, and in winter they would thrive well on your wild hay. This will, undoubtedly, soon become an important branch of agriculture in your State.

"Experience has taught me that corn will come up much sooner by being drilled. This I consider an important item, especially in your State, where the summers are shorter than they are here. Our plan, in using it, is to have the ground well harrowed, and then one hand can do all the planting, simply by running the drill over it three feet apart. It goes with one horse, and a man can easily plant eight acres in a day; whereas it would take four to do it in the common way. The farmers here object to it on account of having to plough all one way; but this can be obviated, by striking it into rows the other way as soon as you commence tending. I have raised ninety-three bushels of corn to the acre, planted in this way, without the use of the hoe. The drill we use costs about six dollars, and will last a life-time."

WILLIAM LAPHAM.

Mount Tabor, Ohio, Dec. 1851.

AGRICULTURE OF WINNEBAGO COUNTY.

Neenah, December 29th, 1851.

Dear Sir—I have the honor to acknowledge the receipt of your communication of the 1st inst., and in reply, take pleasure in giving such information concerning the agricultural resources and condition of this county, as my

acquaintance, and the limit allowed me, will permit. Not having any statistical data at hand, my observations will necessarily be more general than perhaps would be desirable for the purposes you may have in view.

The surface of the country is generally flat, yet sufficiently rolling to admit of drainage, and well diversified with timber, openings, and prairie; abounding in springs of pure water, and so intersected by the Fox and Wolf Rivers, and Winnebago Lake, that no farm within the limits of the county can be more than six miles from navigable water. The soil in the timber and openings is generally clay underlaid with gravel, and interspersed with ridges of limestone and gravel, and abounding in boulders or "hard heads." The prairies are small, and more free from clay, but abounds in limestone. The timber is composed of oak, ash, basswood, hickory, butternut, hard and soft maple, very little beech, some pine, and swamps of the white cedar and tamarack.

Crops.—Winter Wheat. Considerable attention has been paid to the cultivation of this important product; and thus far it has proved successful, yielding from twenty to forty bushels per acre, according to the season, and the manner of cultivation. The last season was rather unpropitious; still a fair crop was realized and of good quality. If sowed before the 25th of September, it seldom winter-kills, or fails of a good crop, and is generally of excellent quality.

Spring Wheat has generally proved a reliable crop; and sowed in season, on land properly prepared, it seldom fails of a rich return.

Oats and Barley are cultivated to a considerable extent, and with very general success.

Corn is a never failing crop, and every farmer gives more or less attention to it. It cannot, of course, be as easily and cheaply raised as on the great prairies and rich bottoms of Illinois and Indiana; but it is here considered an indispensable product for home consumption, and is generally as remunerative as the finer grains. The flint and dent corn are both grown here; the former yields generally forty and fifty, and the latter seventy bushels per acre. The average price for the last six years has been fifty cents per bushel.

Peas have been cultivated in some instances as a field crop; and when ploughed in have generally done well, though they are not a favorite product with our farmers.

Red and White Clover, Timothy and Red-top, are natural to the soil and climate, and do far better here than in the more southern counties, so far as I am acquainted.

Some consideration is now being given to the subject of the cultivation of Flax for the seed. An enterprising firm at Oshkosh, (Messrs. Weed and Gumær,) are erecting an oil mill on a tributary of the Wolf River, and offer to furnish seed to the farmers, and pay seventy five cents per bushel for all the seed raised. It is

thought that the soil and climate are well adapted to the growing of Flax, and that it will soon form one of the staple products of the county.

The Tobacco plant has wandered so far from "Old Virginny," that it is thought acclimated even this far north; and several of our farmers are proposing to go into the raising "the weed" another season.

Potatoes.—This valuable esculent used to be a profitable crop before the rot became fashionable; but for the last four years has hardly paid cost as a general thing. No soil or locality seems proof against the disease. I have tried through a period of five years the different varieties of soil and location; sand and gravel, clay and loam, high land and low land, wet land and dry, and with the same general result. I have, however, satisfied myself that the difficulty is not occasioned by an insect or a grub, but is a regular disease, and one for which no adequate remedy has yet been found. But my repeated attempts and partial failures have convinced me of two things, to wit: potatoes should be planted early, and should not be planted whole, but cut in small pieces in order that the seed may decay as soon as possible; and, further, that, when there is any indication of disease, they should be dug as soon as ripe. The disease has considerably modified its form since its first introduction, and I think is gradually being abated. Five years since it visited my potatoe patch, for the first time, one day after a warm shower, and in less than twenty-four hours the whole was a black mass of corruption, the stench of which was intolerable. Since that time it has gradually lessened its virulence, so that during last season I was enabled to save the "lion's share," which has usually been appropriated by the other party. My success this time, however, I attribute to the fact that I dug my potatoes as soon as I saw the disease strike the leaf, and before it reached the root.

Fruit.—We have every natural indication of a fine fruit-growing county. Wild grapes, apples, and plums abound; and so far as fruit has been introduced it has been cultivated successfully. Nine years since, I put out the first trees that I have known in the county. My peaches produced fruit the second year, and the fourth died out, apparantly from the effects of some insect. My plums were destroyed without producing fruit (after they had grown to a large size) by some, to my superficial vision, unseen cause. My apples have produced fruit for two years past; and I have currants, grapes, and cherries, in reasonable quantities. Last year I set out a new lot of trees from Phœnix's Nursery, Delavan; among which were apples, pears, peaches, plums, apricots, cherries, quinces, &c., all of which are doing well, and promise well for the future. Our farmers are generally giving attention to the subject; and for the last two years very many orchards have been planted, and but a few years more will elapse before we shall produce sufficient fruit for our own immediate consumption.

Appropos of trees. Much imposition has been practised by pedlars and

others in the introduction of trees; and the business of fruit-growing has been greatly retarded by setting out lifeless and stunted trees. No tree should be taken from the Nursery before they are four or five years old as a general thing. Many have been induced to set them at two years, upon representations that they would do better, and be more likely to live; such have seen their orchards "growing smaller by degrees, and beautifully less," until they have replenished with older and more thrifty stocks. If I were to recommend, I should say to all who wish to set trees, go to Bell's Nursery, on Gardiner's Prairie, or to Phœnix's, at Delavan, where better trees can be procured, and at less prices than at any other places within my acquaintance.

Stock.—As yet our farmers are not fully alive to the importance of raising good stock. A colt is a colt whether the progeny of a dwarfed Indian pony, or a "blood," and a calf is a calf whether a "scrub" or a "short horn"—in the estimation of the greater portion of our farmers. I hope, however, a better state of things is gradually being introduced in this respect, as farmers turn their attention from grain to stock-raising.

Some good stock horses are finding their way among us; and I hope the period is not far distant, when more encouragement will be given, and greater inducements held out for the introduction of improved blood. There is no reason why we should not have as fair a stock of horses of our own raising here, as in Vermont or New York, from whence comes some of the finest stock in the world. I find it as easy to raise a horse as a cow, and the one (if of good stock) is worth several times as much as the other. If proper consideration was given to this matter, I have no doubt but our farmers would generally breed from the best stock at whatever cost, and find their interest in so doing in the enhanced value of their progeny. It is a fact very generally acknowledged, that our Northern horses are far better, and more capable of endurance than the Southern. One Vermont or Northern New York horse will out-work and out-travel half a dozen Indiana and Ohio. The reasons I will not stop to consider, but the fact is important. Take, for instance, the "Morgan" horse, from Vermont, for speed and bottom, for strength and power of endurance, he stands unsurpassed if not unequalled. Let such a stock of horses be introduced and bred among us, instead of taking up with anything that bears the name of a horse, and great benefits will result. In this connexion I take the liberty to remark, that Mr. H. Eldridge, of Menasha, will probably bring from Vermont a fine specimen of the Black Hawk Morgan—the sire of which is valued at $5,000—during the next season; and I shall look upon it as an acquisition of the first importance, and worthy the attention of our stock growers.

Cattle.—There is a sprinkling of short horned blood throughout the county, mostly derived from some fine animals introduced by myself eight years since;

but as yet good stock is not properly appreciated, although I think an increasing attention is being given to the subject. As of horses, so of cattle, one good animal is worth several poor ones, and costs no more in raising.

Sheep.—As Indian dogs and wolves disappear before the tide of civilization, sheep become more numerous among us; but as yet there are few large flocks in the county. It is, however, regarded as one of the most profitable branches of agricultural labor; and since the low prices of grain, and the high prices of wool of the past season, many are becoming awake to the subject.

Swine.—Thus far, there has not been pork enough raised in the county to supply the home demand: immigration and the lumbering business consume a large amount. We have generally a good breed of hogs, and our farmers all raise reasonable quantities of pork, and the amount is rapidly increasing.

The Dairy.—Although naturally one of the best grazing counties in the State, there are as yet, to my knowledge, no dairies of any amount in the county. Butter brings from twelve to sixteen cents, and cheese ten cents per pound; and but for importations from abroad would be vastly higher. I presume that more than one half the butter and cheese sold in the county is from abroad.

Maple Sugar is manufactured to considerable extent by those residing in the timber lands. And the Indians and half-breeds on our borders annually produce thousands of pounds, and some of the finest I ever saw.

In conclusion, allow me to remark that we are as yet but a new county, and our Agricultural interests in their infancy. Our population have generally had all they could do in getting established, and preparing for future operations. We have yet no Agricultural Association formed, or other stimulant to exertion than those which necessity has imposed. As we become more independent, and have more leisure to look about us, more will be done. And the time is not far distant when Winnebago will be one of the richest counties in the State, both in agriculture and manufactures. Its geographical position is such as to make it accessible, for markets, from the East and the West, and its soil and climate will permit the successful cultivation of all the various products of the Northern States; while the immense hydraulic power within our borders, inducing heavy manufacturing establishments, will create a home demand, which is the best of all markets for the farmer.

Very respectfully and truly yours,

HARRISON REED.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

COMMUNICATIONS.

COMMUNICATIONS.

BREAKING PRAIRIE.

From J. Milton May, Esq., Janesville.

The work of Breaking Prairie is very justly considered of the first importance by the settler in a Prairie country. Indeed it is not uncommon to find a quarter or a half section of land, broken and sown with fall or winter wheat, which has attained a thrifty growth before it is enclosed.

Necessity, and a prudent forecast on the part of the pioneer, indicate the importance of growing a crop as early as possible, for with his grounds broken and sown, the long winter will afford ample time to procure his fencing materials, even though his timbered land is a half dozen of miles distant from the farm he is making; and the following season finds a field well enclosed, with the appearance of having been under cultivation a half century.

In the early settlements of the prairie country the obstacles in the way of rapidly and easily *breaking prairie* were somewhat numerous and formidable. Some of the principal ones may be mentioned in this connexion:—First, the tenacity and strength of the prairie sward, arising from the ten thousand wire-like fibrous roots, interlaced and interwoven in every conceivable manner.—Second, the *red root*, so called. This is a large bulbous mass of wood or root, gnarled and hard, very much resembling cherry timber in color and density. When in a live state, it sends up annually a twig or shoot similar to the willow, which is destroyed by the prairie fires, so that no tree or shrub is formed, while the root continues to grow, and attains a diameter of six, eight, and sometimes twelve inches. These roots are found usually in a given neighborhood, while other and large sections of country are entirely free from them.—Third, in locations where adjacent improvements prescribe limits to the annual burning of the prairie and in the neighborhood of the groves, hazel bushes spring up, forming a thicket which are called "hazel roughs" by those who break prairie.

Formerly, to overcome these obstacles and make any considerable progress in the work of "breaking," four or six yoke of oxen and two men were found necessary, but ingenuity and enterprize have wrought a great change in this important department of labor. Instead of the heavy, uncouth, and unmanageable wooden ploughs, with iron or steel points, formerly used, various kinds of improved breaking ploughs are brought into requisition, reducing the cost of breaking to one-third or one-half the former price.

Among these improved ploughs may be noticed a singular and unique looking one called the *skeleton plough*, which turns the furrow with a gradual motion, by means of small iron rods instead of a mould board, thus reducing the friction and making the draft very light. Sometimes wheels are attached and so arranged that the plough is self-holding, and the depth of the furrow regulated by a lever. This arrangement dispenses with the labor of one man.

In later years, small ploughs that can be used by one man and a span of horses are considered the most valuable. One description of these small breaking ploughs has for its foundation a thin plate of wrought iron or steel, combining lightness with strength. The coulter is composed of a single plate of steel about three feet long, pointed at both ends, and fastened by a single bolt near its centre, to the plough post, about six inches below the beam. When one end is dulled by use, the other is presented by reversing its position.

The share and coulter of breaking ploughs should be of the best steel, such as is used for edge tools, the angle of the share relatively with the landside should be about thirty degrees, and the angle of the coulter about twenty degrees.

If good materials is used, the above angles (substantially) observed, and the plough otherwise constructed with due regard to proportion, an implement will be produced that will cleave the sward easily, and dispose of the furrow with the utmost precision, and at a cost not exceeding that of breaking meadow or pasture sward land, in the eastern or middle States. It is not uncommon for a man, with one span of horses, to break one and one-half or two acres of prairie per day, during the season.

The width of furrow, the depth most desirable, and the best season of the year for breaking prairie, are questions in regard to which a variety of opinions have existed. Now, however, amongst practical men the narrow furrow is generally preferred, as it is more readily pulverized under the harrow, in preparing the ground for seeding, while the best depth, undoubtedly, is two and a half or three inches. A greater thickness of the furrow slice will tend to preclude the atmospheric and chemical influences necessary to the decomposition of the vegetable portion of the sward, and, as a consequence, the ground will be unfit for fall seeding.

If a less thickness than two and a half inches is made, there is danger that

grass shoots and weeds will penetrate through the thin sod, and a healthy growth of vegetation promoted, instead of a subjugation of the land to agricultural purposes.

The months of May and June are the best for breaking prairie; and should the amount of work to be done be insufficient to require these entire months, the time intervening from the twentieth of May to the twentieth of June, without doubt is the most appropriate, although many persons commence earlier, and continue later, than the time here indicated.

Frequently a crop of corn is raised on the sod by "chopping in" the seed corn with a sharp hoe or axe, or by dropping the seed along the edge of the third or fourth furrow, and then covering it by the succeeding one, and often ten to twenty bushels per acre is raised in this manner.

An experiment was made by a practical farmer during the last season which presents a new phase in corn raising on newly broken prairie. An ordinary furrow was turned, and immediately after another plough running deeper cut a second furrow, from the same place, which was turned directly upon the first one. This process was continued, until the entire field was subsoiled in the same manner. On the upper furrows the corn was planted, and from the absence of the vegetating portion of the grass roots decomposition was more rapidly promoted, and this sod soon fell in pieces under the cultivator in dressing the corn. This experiment resulted in a very heavy crop.

Does not this successful innovation indicate advantages, (not only in growing corn, but in a greater broken depth of soil for subsequent cultivation), that are worthy the practical consideration of agriculturists?

Will not this experiment materially aid in advancing this important branch—prairie farming?

The disparity in time and expense of "making a farm," in a heavily timbered country, or on a well chosen prairie, is greater than would at first seem apparent. True it is, that most of us have listened with delight to the "loud sounding axe," as with "redoubling strokes on strokes" the forest denizens were laid low with a crash that was right musical, as the echo reverberated amongst the hills;—but consider then the burning and clearing off the timber, at a cost of from five to twenty dollars per acre, with the stumps remaining, as a memorial of hard labor, for a quarter of a century—contrasted with two to three dollars per acre for breaking prairie, which is as free from obstructions as though cultivated an hundred years, and which suffers by the comparison?

"But the item of fencing! Of enclosing these lands!" Based on careful estimates the conclusion is reached, that fencing a thousand acres, in the ordinary manner, is more expensive in a timbered than a prairie country;—besides the prairie country can furnish examples where the *first crop* has paid for the soil

one dollar twenty-five cents per acre, besides breaking, fencing, seed, harvesting, and marketing the crop, with a surplus remaining of some forty cents per acre.

At the risk of being considered extravagant the opinion is hazarded, that had the advantages of Wisconsin, Illinois, and Iowa, been as fully understood thirty years ago as they now are, and the facilities for reaching these States been as great as at present, many portions of the eastern and middle States would have remained an unbroken forest, valued chiefly for its game and timber.

MANURES.

From a Member of the Society.

All substances which, when mixed with the soil, tend to fertilize it, or existing in the atmosphere, can be drawn in by the organs of the plants, and thereby contribute to the progress of vegetation, are in common language termed manures. These are composed of animal or vegetable substances, or they may consist of mineral matter, or partly of both. The state in which vegetable or animal matter exist in the soil, and the changes through which it passes before being taken up by the roots of the plant, were almost entirely unknown to chemists until within a few years past. Experience, however, has taught the husbandman in every age, that all animal and vegetable substances mixed with the soil tend to fertilize it, by affording nourishment to the plants which it produced. But science has, in modern days, made known to us the truth, that the living plant and the dead manure are resolvable into the same elementary substances. On examining the constituents of vegetables, it is found what are their elementary properties. It is evident, therefore, that the substances employed as manure should also be composed of these elements, for unless they are, there will be a deficiency in some of the principles of the vegetable itself; and it is probable, that such deficiency may prevent the formation of those substances within it for which its peculiar organization is contrived, and upon which its healthy existence depends.

Vegetable and animal manures deposited in the soil, are dissolved during the process of vegetation, and the plant is nourished by so much of the manure as is dissolved by water. The fluids in the leaves and roots of vegetables, absorb the soluble parts of the manure, resulting from its decomposition; and the great object in the application of manure should be, to make it afford as much soluble matter as possible to the roots of the plant, and that in a slow and gradual man-

ner, so that it may be entirely consumed in forming its sap and organized parts. Water is apparently the medium by which all the matter of nutrition, in whatever form, is conveyed into the roots of plants, and without which, accordingly, vegetation is never known to take place. Therefore it is, that the substances which form animal and vegetable manures, before they can be made available as nutriment to plants, must be rendered soluble in water.

This explains the reason why frequent stirring of the ground by the plough or hoe, aids the growth and cultivation of the plant. It exposes to the action of the atmosphere the decomposed organic matter of the soil, which becomes soluble by air and moisture, and thus becomes food for plants.

In supplying animal and vegetable substances to the soil in a decomposing state, we, in truth, supply the same substances which enter into the composition of the living plants. The right application of those substances, or manures, to plants, is very important, so that they may receive all the benefit of their fertility. Unfermented manures spread upon the surface, may produce little or no nutriment to the plant. Fermented manures, if spread upon the land's surface, may have lost during the process of fermentation their fertilizing qualities; or if buried and fermented in the earth, and the soluble parts thereby prevented from escaping, yet may fail in their effect on certain plants, as the beet, turnip and carrot, unless applied in a putrescent state to the first stages of their growth. The potatoe requires less in the first stages of its growth than the turnip. Manures should always be applied as soon after it has been prepared as possible, there being a waste either in retaining it too long, or in causing it to undergo a greater degree of fermentation than is required. Fermentation is the means which nature employs to draw from manures its nourishment for plants—without it manure has no effect. If this process of fermentation takes place in the open air, unless a quantity of earth is thrown over the matter in which the fermentation is going on, there is an escape of the fertilizing mattter into the atmosphere. The fermentation may be begun in the compost heap, but should be completed by ploughing the manure into the soil. Plants have their mouths open to drink in the juices of manures when decomposed in the earth. The manure heap has been justly described as the farmer's gold mine. No husbandman can carry on his business successfully without it.

Every farmer who attends for a moment to the difficulty of obtaining a sufficient quantity of dung, as well as preparing what is got, will acknowledge that however imperfectly the subject be understood, none is deserving of more serious consideration; yet even the most superficial observer on the common state of culture can hardly fail to remark, that the evident inattention to its management is such as would almost lead to the conclusion, that it was not worth the pains of the farmer's care.

It is not uncommon, indeed nothing is more common, than to see large heaps of manure thrown out from the stables and feeding sheds, and exposed in that state to the weather, without any regard to its being laid up in a regular or careful manner, secured from evaporation, or carefully mixed in different proportions, according to its various qualities: yet these proportions are each of a very distinct and important nature.

The simplest of all composts is a mixture of barn-yard dung and surface mould, taken from a field under regular culture. The proportions between the ingredients are fixed by no determinate laws, and consequently great liberty is allowed to the operator. Some use two cart loads of dung to one of earth; others blend them in equal quantities; and it is not unfrequent to compound them, two of earth and one of dung. Such is the uncertainty in the composition, that almost every farmer adopts a method peculiar to himself, and with equal success. The only error into which the farmer can run, is to supply such an inconsiderable quantity of soil as will be incapable of imbibing the elastic and volatile particles, and thus by his own mismanagement occasion a waste of the vegetable aliment. One cart load of soil to two of stable dung, is the least proportion which he should ever attempt to combine; and perhaps if the two were mixed in equal proportions, he would be compensated for the additional labor and expense.

The produce of the farm yard will necessarily afford the chief part of the manure consumed upon farms, which do not possess extraneous sources of supply. It consists of the excrements of the animals kept and fed upon the farm, together with the straw or other materials used as litter, and generally of the refuse and offal produced about the homestead. This mixed mass is collected during the process of feeding, when it undergoes a certain degree of fermentation. The dung of horses more quickly ferments than that of oxen; therefore it should not be allowed to accumulate in a mass, but spread abroad upon the general heap. That of horned cattle also soon ferments when it is collected into a heap, and is only moistened by its own humidity; but this process is slower than in that of horses, because it is not so much exposed to the same internal heat, in consequence of which its evaporation is less. Sheep dung decomposes quickly when it is moist, and compactly massed together; but when dry and dispersed, its decomposition is slow and imperfect—its effect upon the soil is soon dissipated—and is generally exhausted after a second crop.

When animals are fed on straw, and the dried stems and leaves of plants, the dung is less rich and decomposable than when they are fed on roots and other nourishing food. And the same thing holds with respect to the dung of the hog and other animals. The excrements of the different feeding animals is mixed in greater or less proportion with their litter; and the greater the propor-

tion of the animal to the vegetable matter, the more readily will the latter ferment and decompose.

The urine of animals is itself a very rich manure, and contains, in certain states of combination, all the elements which enter into the composition of plants. It is necessarily mixed with, and partly absorbed by the litter and other substances in the yards, and it hastens in a material degree the fermentation of these substances.

But while no necessity exists for fermenting the matter of the barn-yard beyond the degree requisite for the special purpose intended; yet it is always a point of good practice to ferment it to that degree. In order to know when it is sufficiently fermented for the particular use required, a very little practice and observation will suffice for the intelligent farmer.

When fully fermented, the long stems of straws which formerly matted it together, are in such a state of decomposition that the parts can be readily separated by a fork. Whenever farm-yard dung has been fermented to that extreme state of decay in which we often see it used by gardeners, in which it can be cut by a spade like soft earth, it has been kept beyond the proper time, and the management has been bad.

But besides the immediate produce of the farm-yard, there are certain vegetable and animal substances, which, in their separate states, may be applied to the manuring of land.

An example of this kind is, when certain plants are allowed to come into flower, and are then ploughed down in their green state and mixed with the soil. When green dressings are resorted to as a manure, such growths should be selected for the purpose as are cheap in the article of seed, and, at the same time, quick, vigorous and bulky. Buckwheat is much used for this purpose. When this practice is adopted, the period when the plants may be ploughed down, is when they have come into flower, for then they contain the largest quantity of readily soluble matter, and have least exhausted the nourishing substances of the soil. In order that the growth be turned effectually under, it should be laid prostrate by running the roller over it, in the direction in which the plough is to follow. By the 20th of September, this growth would probably be fit to be turned under, after a crop of rye, oats or barley has been harvested, and a crop of wheat sown on the lay.

Bones are regarded as a very important animal manure. They are a powerful agent in fertilizing the soil. They contain in an abundant form the food of plants. They abound in what chemists call phosphate of lime, a substance found in all plants—and a large amount of gelatine, an animal substance soluble in water. Bones have been used as a manure for many years in Europe, with the greatest advantage; its effects upon the production of wheat in Great Britain

have been stated, after careful observation, compared with the best stable manure, in respect to the quality of the grain, as 7 to 5. In respect to the quantity, as 5 to 4. In respect to the durability of its effects on the soil, as 3 to 2. Bone manure is less beneficial when applied to clay lands than to lighter soils; and in wet seasons than in dry. The ashes of wood and all vegetables may be used as a manure. They have a marked and very beneficial effect when applied as a top-dressing, especially to grass lands. They also answer a most valuable purpose when applied to Indian corn. The action of leached ashes is most powerful upon moist lands and meadows, in which they not only facilitate the growth of useful plants, but if constantly employed for several years, they will free the soil from weeds. By the use of them, moist lands may be freed from rushes and sorrel, and prepared for yielding clover and other plants. A large portion of alkaline matter, it is said, must remain in all ashes after leaching, which accounts for the benefit they render to wet, sour soils, by neutralizing such acid, and promoting the decomposition of vegetable matter, which in such earths always proceed slowly, while at the same time they prevent adhesion in the soil, and enable the roots of plants to seek their sustenance freely. On light, sandy soils they give consistency, and by the existing action of their still abundant salts, effectually promote vegetation.

Of all the mineral substances known to us, lime is that which performs the most important part in improving the soil, and promoting the growth of vegetables. It is an error to suppose that lime in any state comprises fertilizing properties within itself; and that without operating upon the soil, or upon the substances which it contains, it is an enriching manure. It is said not to possess any fertilizing principle in its own composition, being merely a calcareous earth combined with fixed air, and holding a medium between sand and clay, and in some measure remedies the defects of both.

The application of lime calls into powerful action the nutrient principles of the soil, and hence, if land be severely cropped after lime has been used, it is reduced to a greater state of sterility than if the stimulant had not been applied. Lime, therefore, calculated as it is to produce the best effects in fertilizing a soil, is frequently made the means, in the hands of an injudicious farmer, to injure it.

But although the stimulating properties of lime may be abused, it is an instrument of production of the highest importance in the hands of the skilful and intelligent farmer. On lands improved and cultivated for the first time, it exercises a very powerful influence; and it is difficult to conceive how in many parts such land could be improved at all without the assistance of this mineral. The application of lime is the most effectual means of stimulating the productive powers of the subsoil, when ploughed up and brought to the surface. On a soil of medium condition, the usual dressing is from forty to fifty bushels per acre.

In this State lime is abundant, and would, no doubt, prove a highly beneficial manure.

To guard against worms and grubs in a wheat soil, a mixture of slacked lime and ashes, at the rate of from three to eight bushels to the acre, harrowed in at the time of sowing, is the best preventive, and will act at the same time as a valuable manure.

Gypsum and marl are very extensively used in other States; and numerous examples are cited by agricultural writers in proof of their fertility. The renovation of exhausted and worn out lands by the use of marl, is most astonishing. From a farm in New Jersey, which raised at the extent ten or twelve bushels per acre, by the continued use of marl, were gathered sixty-three bushels of shelled corn per acre. Lime is extensively used in Pennsylvania, and with great advantage. Neither gypsum nor marl, to my knowledge, has been discovered in Wisconsin.

There is one method, however, of increasing the quantity of manures upon a farm, which should in no case be neglected. This is by forming composts. If dung, or any animal or vegetable substance, be mixed with the earth, the latter will imbibe a portion of the decomposing matter, and become itself fitted to be used as a manure.

There should be, at least, one heap of this kind upon every farm, as a general receptacle for all substances capable of being fermented, which may from time to time be procured. Urine, soapsuds, and the like, poured upon such a heap, will be found to be very beneficial. The whole should be thoroughly turned over several times, so as to mix the materials together, and promote fermentation. The management of composts of all kinds is exceedingly easy. The fact, that every sort of putrescent refuse may be mixed with earthy substances—that lime acts beneficially in fermenting the mass—that frequent turning mixes the substances together, and produces the action required, are sufficient to guide the farmer in all cases, in this simple but very important branch of farming economy.

In new countries when the soil is fertile, and vegetation rank, the preparation and application of manures is almost entirely neglected. The great difficulty with many farmers seem to be, how to get rid of their stable manures. Thousands of straw stacks are suffered to waste. But there is no branch of agriculture so much entitled to the consideration of the farmer as the subject of manures. They are the food of plants. Our farmers have not the time and ability to make experiments. They follow the beaten track. But if we had a model farm connected with a scientific institution, on which could be expended and exhibited the recent discoveries of agricultural chemistry, its benefits would be gradually felt on every farm in the State.

FLAX CULTURE.

Symington Flax Factory, Mukwonago,
Wisconsin, December 1851.

Dear Sir—I have the pleasure of acknowledging the receipt of your Letter of 1st instant, requesting information about flax, for the use of the State Agricultural Society.

Following, in some measure, the order of your interrogatories, I proceed first, to "describe the manner of raising and preparing flax for market as practised by me."

Soil.—I select and rent good new land when I can get it, in order to keep clear of weeds. In this neighborhood we have mostly oak openings, with small prairies and bottom lands bordering on marshes. I have found flax grow well on all, but I prefer the black soil of the latter. Sandy land is not good for flax. Fall-ploughing is preferable, and the ground should be as well pulverized as possible.

Seeding.—I find the most suitable quantity of seed to sow, to the acre, to be one and three-quarter bushels, where, as in my case, the fibre is more an object than the crop of seed. In 1849 I put on two bushels, which was rather too much, the thick growth keeping the flax short, though fine. I commence sowing so soon as I have reason to believe the night frosts are over, say about the twentieth of April, and up to the tenth of May; not later. I cover the seed in with a light drag, thickly studded with wooden teeth. It is still a question undicided by the most experienced in flax culture, whether rolling is advantageous or the reverse. I do not adopt it.

Pulling.—I have the flax all pulled by hand, employing from sixty to eighty men in harvest. It is tied up in small bundles, say about twelve inches round, and four or six of these set up together, leaning as lightly as can be on each other, so that the tops, with the seed on, may dry soon. When it is in a sufficiently dry state and not likely to heat, I put it up in cocks like hay, root ends outside, building the bundles on lightly so as to have a circulation of air, and thoroughly dry the flax and seed capsules; of course I protect the top from rain. When the whole is perfectly dried, it may be stacked up and remain for years without injuring quality or weight of flax.

The object of having the flax tied up in small bundles at pulling is two-fold: it dries sooner, say in two or three days, as the state of the weather may be, whereby the color is not injured on the outside by the scorching sun, which would be the case if standing till the inside of large bundles was dry; and again,

small bundles are convenient for the subsequent operations of taking the seed off, rotting, and spreading. Thus, though my method takes up more time at pulling, it is more than compensated for afterwards. It will take five active men to pull an acre of good heavy flax in a day.

Lashing.—I have as yet in operation only the simple plan of taking the seed off by lashing. When the flax and seed are thoroughly dry, two or three smart blows of each bundle on a plank or log, takes the seed clean off the straw and will break most of the bolls. I then put it through the fanning mill, any bolls coming through entire are broken on the barn floor with flat mallets. If there are weeds I have sieves of different sized meshes to take them out—of course there are more economical methods of separating the seed from the stalk, but none that I as yet know of by which the latter can be kept unbruised, and that is an important matter. I brought some rippling combs with me from the old country, but gave up using them after the first year.

Rotting.—I water-rot all my flax. I have a small creek of pure water running through a meadow on my place with a fall of a few feet. I have pools of various sizes dug out, end on to the stream. I lead the water off, at the proper level above, by a small conduit, to fill the dam at one end when wanted, and let it off at the other when done with. I have about three feet water in the dams—four feet would be better—the water let in a day before using it. The flax is then packed in closely, in a sloping direction, with the tops up—then loaded down with logs and stones till all is completely under water, but not touching bottom. Fermentation generally commences the day after the flax has been put in the dam, and it will *rise* considerably to the surface. This must be watched and fresh loading put on, as whenever the flax, after being immersed, is exposed to the sun and air, it will become discolored and its value lessened. When the fermentation has ceased, generally on the third day, the flax has a tendency to *sink*, and if I find it so, I remove part of the loading to keep it about midway between the surface and bottom of the dam. The time flax requires to be left in the water to be properly rotted, depends on so many circumstances and contingencies, that it is utterly impossible to condescend on days and hours. I have had it sufficiently rotted in five days, and I have found twelve days insufficient in other cases, the state of the weather and the kind of flax varying in almost every filling of a dam. After the fourth day I keep trying several bundles at different parts of the dam. I take four or five stalks from the middle of the bundle, lay them flat and break them, and if the straw breaks short and tender, and then separates easily from the fibre, leaving the latter not *towy* but entire, the rotting is about perfected. Another test is to take a single stalk in hand, break it about the middle in two places, say three inches apart, and if the straw can be drawn *easily* and *clean* away from the fibre, it is evidence of the flax

being about sufficiently rotted. Either of these tests will come near the mark; but it requires practice, and long practice too, to attain to perfection in this, the most difficult point of flax management.

When the rotting is completed I run the water off the dam, except about twelve inches, as scum collects on the surface, and it is useful to give the flax a slight wash, one dip is enough, by the men who go into the dam to hand it out. Forking will not do. It is left for an hour or so on the brink of the dam to drain the water off, and then taken to the field to be spread.

Spreading.—In spreading it is necessary to shake the handful well so as to leave some of it in clots, or the bleaching will be irregular. Thin spreading is decidedly the best for this country, as it saves the expense of turning on the grass. If my judgment has been correct as to taking the flax out of the water at the right time, (for with all my experience I make mistakes sometimes,) two or three days will suffice to bleach and dry it. If it has a good shower of rain while on the grass, so much the better, but that should not be waited for, as the night dews, in warm weather, are a good substitute, and too much exposure to the sun is injurious to the flax, reducing both weight and quality.

After being sufficiently bleached, or grassed, as it is called, which may be tested by the straw breaking short and tender from top to root, and separating easily from the fibre, the flax is lifted and stacked up.

Breaking and Scutching are the next processes; but as those are not ordinarily within the compass of a farmer's means or opportunity, I do not deem it necessary here to describe them at length; indeed without drawings of the machinery any description would be useless. There are a number of patented inventions for breaking and scutching flax, both here and in Ireland, but with some improvements of my own, I have adhered to the old fashioned principle of both, in use in the latter country. The whole of the machinery is simple, cheap and effective. The breaking rollers I use were made by Mr. Isaac Corbin, of Genesee—the scutching mill was constructed by Mr. M'Farlan, of South Genesee, from plans and drawings by my friend Horatio Harrison, Esq., of Spring Lake, Mukwonago. I use horse power. Water is perhaps steadier, but not always to be had, and steam is dangerous with such a combustible article as flax.

I beg now to make a few observations as to the adaptation of our soil and climate for the growth of flax, in reply to your next query.

While on a tour through the United States, in the year 1847, I became convinced that this Western country was eminently capable of raising good flax on an extensive scale, and acting on this conviction I returned from Europe in the spring of 1848, for the express purpose of establishing a business in flax. I arrived rather late to have much choice in the selection of land, but I got twenty acres put in as an experiment. The result of some of the samples encouraged

me to sow ninety-six acres in 1849, which proved to be a very fine crop in quality, but not a heavy yield. In 1850 I had one hundred and twenty acres, but that season was very unfavorable owing to the drought in spring, and the crop was inferior, both in quality and yield. In 1851 I had one hundred and eight acres, not of such fine quality generally as in 1849, but more than double the weight per acre, and a much better paying crop.

The quality will vary here, as elsewhere, with the nature of the season; but after the experience I have had, I have no hesitation in saying, that both soil and climate of Wisconsin are as well adapted to the growth of flax as any other country I have been in, or am acquainted with. I resided twenty years in Holland, Belgium, and Ireland, all extensive flax growing countries; and have besides, in the course of my business, had large quantities of Russian and Egyptian flax through my hands, and I think I am qualified to speak with certainty on this point.

I do not think we have quite so large yield to the acre as in Ireland, owing to the rapid growth not allowing the flax to coat so thickly; but to counterbalance that, the seed is a sure crop here, and a very uncertain one in the humid climate there. Indeed it is only of late years that the "Royal Society for the promotion and improvement of the growth of Flax" in Ireland has been successful in turning the attention of farmers to saving the seed at all, and that mostly for feeding purposes, little of it being fit for sowing. The farmers used to make a point of having the flax put into the dams, with the seed on, the same day it was pulled. I was the first to attempt to save seed in Ireland on a large scale, 252 acres, and had very partial success.

While I firmly believe that the Western States of America, say Wisconsin, Illinois, and Iowa, can grow as much flax as might nearly supply the whole of the European markets, I admit it must be done in a way to suit the circumstances of the country; and I shall now make some remarks in reply to your enquiry for general information on the subject of flax, to explain my meaning.

In *Ireland*, every farmer has either a stream of water running through his lot, or has one convenient, or a bog hole, for the purpose of rotting his flax—the water-power too is inexhaustible, and spread over every township. A farmer, therefore, grows flax as any other crop, and prepares it for the scutching mill, which he finds close by him as we find grist mills; he pays so much per hundred for dressing it, and can then take it to market when and where he chooses. In the province of Ulster most farmers have, more or less, flax as a regular rotation of crop. The culture is now being introduced into the South of Ireland, where both soil and climate are superior to the North, and so far it has succeeded well. I have seen the crop of Irish flax estimated as high as thirty-six thousand tons per annum; but having a good opportunity of knowing, I am very certain it

never, in my time, exceeded twenty, and was frequently much under. The Society already alluded to, which is supported by a Government grant and voluntary contributions from manufacturers and landed proprietors, has done much good, of late years, by placing qualified persons at the disposal of local Agricultural Societies to give practical instructions in the different processes of flax management; the quality of the flax raised has been immensely improved, and the profit accruing to the producer in proportion.

In *Holland* the system of conducting the flax trade comes nearer to that we shall have to adopt in Wisconsin. Perhaps four-fifths of all the flax raised in that country, averaging somewhere about 7,000 tons per annum, is owned by men resident on the small islands of Onermaas and the two Beyerlands, who make a business of it. Flax is grown by farmers on their own land in scattering districts, but is mostly of poor quality and of little account, if I except the province of Friesland, where strong good flax is raised, fit only, however, for making shoemaker's thread, and some numbers of tailor's thread. The way in which the bulk of the crop is managed is this: at the proper season, the men who have their establishments on the islands named above, go into the neighboring provinces, Zeeland is preferred, and rent such land as they think suitable. The occupant of the land ploughs and drags it, the *flax* farmer (*Vlas Boer* he is called) furnishes the seed, sows it, and weeds the crop when about two inches high. This is so far only a *provisional* agreement. On the twenty-first of June all interested go to their respective sowings to inspect the crop. If it promises, favorably in the estimation of the "Vlas Boer," the original bargain is confirmed and stands; but if otherwise, he has the liberty of throwing it up, pays no rent, but sacrifices his seed and all his expenditure for weeding, travelling, &c. The farmer, on whose land the crop stands, may then either speculate on a change of weather improving the flax, (the seed has cost him nothing, and he can be content with rather a poor crop), or he ploughs it down at once and puts in a crop of rape.

Perhaps this system has originated from the circumstance that in Zeeland where the least flax soil is, the water is brackish and unfit for rotting flax. Around the islands of Onermaas, old and new Beyerland, &c., the numerous branches of the Rhine, under local names, are beyond the reach of salt water, though influenced by the tide; and the land itself is below their high-water level by several feet, protected by dykes. Inside these celebrated dykes the fields are intersected, not by fences and hedges as with us, but by ditches a few feet wide to drain the land. In those which are filled with soft water, the flax is rotted, and afterward spread on the pasture ground at hand. The flax is brought home in lighters, and it being all inland navigation, the boats are not only loaded under hatches, but built upon on deck, half way up the mast, so that the transport is not expensive. As the same water cannot, certainly ought not,

be used for a second rotting, it is let off by sluices at low water; and, if necessary, pumped off by a wind-mill into the river, and fresh water let in by the sluices, if wanted, before the ditches fill by draining again.

In Holland flax is invariably rotted in the same season it is pulled, and scutched off during the winter. The population of those islands, so often referred to, is totally inadequate to perform these operations; but at the usual season there is an influx of men and women from agricultural districts, accustomed or trained to labor on flax, who year after year look to this employment in winter to help them through, without any detriment to their own little farms at home.

In Belgium, in the districts which supply the principal markets of Lokeren, St. Nicholas and Malines, and partially Bruges, with flax, the culture is mostly on a small scale, more like gardening than farming; and, consequently, by the attention of a family, who might else be idle, being devoted to a small field of flax a quarter or half an acre, fine quality is produced, and high prices are obtained; the rotting is something like that in Holland. In the provinces of Liege and Haynault there is a large quantity of flax produced, passing by the name of Walloon flax; but in that mineral region there being no suitable water, the farmers labor under the disadvantage of having to dew rot it. Still I have seen some very good flax of that description; and as it continues to be raised, it is to be presumed it pays. Dew-rotting does not bring flax up to its full natural value. For certain purposes, such as threads which have to be dyed, and unbleached common linen cloth, it is well enough; but it does not take a pure white color in bleaching, as wanted for shirtings, &c., like water-rotted.

There is a district of country, embracing a portion of French and Belgian territory, watered by the river Lisse, which produces the best flax in the world; and there has been, and still is, a sort of magic influence ascribed to the water of this slow, sluggish river, in which the flax is rotted, as the means of making it so much superior to any other. Experiments, almost without number, have been made with it at great expense, such as taking flax grown in other districts, even in other countries, to be rotted in this water, and also taking the water itself to other districts. I am not yet prepared to say positively, whether or not we have in Wisconsin such water as runs in this river Lisse, having unfortunately mislaid the analysis of its properties; but I rather think we have it in plenty. There is a peculiarity in the mode of treating flax in that district, being kept in stack for three years after pulling, and then rotted, which, it is believed, brings out the quality better. I have come pretty near this Courtrai flax in my experiments on samples the first year; and to test the matter thoroughly, I reserved a small portion of my crop of 1849, in the straw just as it was pulled. After rotting it this ensuing summer, I hope to have formed an opinion whether or not I am up to the mark, and to have samples to show at the next annual

meeting of our Society. It is not, however, after all, with a fancy article of this kind, of limited consumption, though high priced, (I have known $1000 per ton paid,) that much general benefit is to be derived by this country. In Normandy (France) a good deal of flax is grown, and considerable attention has been paid of late years to improve it by good management, with some degree of success, though the best of it I have handled can be easily surpassed in Wisconsin.

In *Russia*, as in Belgium, there is both dew and water-rotted flax, depending on the facilities which the producing provinces offer as to water. All that finds an outlet by the White Sea at Archangel and Onega, is dew-rotted; that by the Baltic, at St. Petersburg, Riga, Pernau, &c., is water-rotted. In that country the flax is all assorted into different qualities, distinguished by particular initials, well known to business men. The assortment is made by government and local inspectors whose decision is arbitrary; and though sometimes erroneous, business generally is much facilitated by the arrangement of classification. For instance, a manufacturer, say in Scotland, has an opportunity of contracting for a quantity of goods, which he knows by experience he can make out of the flax marked "PTR," at Riga. He refers to his price current, makes his calculations and his bargain, and orders the mark he wants from his correspondent in Riga, with very nearly a certainty of getting the suitable article. The house in Riga has again to deal with another party, generally a native dealer or jobber, who agrees to deliver that mark at a fixed price, either on the arrival of the barques after open water, or at any time that may be bargained for. In his transactions with the land-holders in the interior, he has to buy all and sundry unclassified. His own judgment must guide him as to what proportion of his purchases will pass the inspectors at the shipping port, for "TR," "PTR," "SPTR," and so on through all the marks which bear their respective prices. One feature of the Russian flax trade is worthy of all acceptation in the present state of Wisconsin, and that is, that two-thirds of the price, down to 10 per cent., as may be agreed on, is paid in advance of the delivery; and in Pernau, the whole amount is paid down when the contract is made—the delivery being, perhaps, after three or four months, and often longer.

In all of those countries I have named, except Ireland, as well as in Hanover, where also a good deal of flax is raised for home consumption, (with a small export of the finest hand spun yarns produced anywhere,) the flax is dressed by hand labor; no machinery is used as yet, or, at least, was not two years ago—but hands being superabundant, labor is cheap.

In *Egypt* the late Ibrahim Pasha took a deep interest in the culture of flax, introduced it on his private estates under the superintendence of an intelligent young friend of my own, and imported both men and machinery from abroad to give

an impetus to the business, with such success, that the export of flax now forms no inconsiderable item in the commerce of Egypt; though the quality is poor, and not fit for making the "fine linen" of former days.

In *Sweden* some flax is grown, but all for home manufacture. Machinery has been introduced; and an extensive spinning mill erected at Gothenburg, which was in successful operation when I last heard of it.

In *Rhenish Prussia* a good deal of flax is grown, also for home consumption. Under the operation of the Foll-Verein tariff, a friend of mine has erected a large spinning mill at Bielefeldt, which will realize him a handsome return on his outlay of capital, and promote the welfare of all around him, whether farmers or operatives.

There are spinning mills in *Switzerland*, but not sufficient flax grown in the country for their consumption. The supply of flax is drawn chiefly from Holland and Belgium.

I do not believe that we can manage the flax trade in Wisconsin, by the individual efforts of farmers, as is done in Ireland and Belgium, because we have not the indispensable water at every door as there; but my conviction is firm and sure that we can nevertheless make flax a staple article of produce, and compete successfully with any other country, though labor has to be better remunerated here than elsewhere. Who would wish it otherwise? I need not say that I consider my own plan of managing it the best; it is this:—I pay the farmer a rent for his land fully equivalent to what he could make by raising a good crop of any other article. I take the entire management of a certain number of acres off his hands, except ploughing and dragging. He can thus have part of his land under cultivation at remunerative rates *certainly*, while he has more time to devote to the rest in harvest time, to make *it* so too. There are localities enough through the country for similar establishments to mine, and I think in this way the most good will be done for the present. By and bye I have no doubt there will be scutching mills for flax as we have mills for flour, of which those who have water for rotting purposes can take advantage; but to make Wisconsin a flax raising State to an extent worth noticing, I believe there must be a division of labor and profit between farmer and flax factor. When I came into this country I had no choice but to grow my own flax, (and I still think it the best plan to get fine quality, as farmers can rarely pay the necessary attention to the minutia of handling while they have other crops to care for;) but since the culture has become more general and oil mills established for the seed, another system is being introduced, and I have no doubt will be useful and successful. Messrs. Hatch and Weed have built a flax mill at Beloit, where they buy the flax straw and manufacture it, the farmer managing his own crop up to, and stopping at, the point of rotting, selling the seed where he chooses. These gen-

tlemen have a patent right to a process of rotting in hot water in vats, and of other matters connected with the preparation of flax, the advantage of which is, that the work can go on during winter, and the flax is rotted in less time. In 1840, I tried to persuade some of the manufacturers in Belfast, Ireland, to make experiments with flax in the hot water running from their mills, keeping up the temperature by a steam pipe, and got rather ridiculed about it. In 1846, the late Mr. Schenck arrived from America with the identical process "patented," and it has since succeeded well in Ireland where the climate makes the usual method very tedious. My opinion is, that this American process is good for Ireland, and my Irish process good for America; but we shall see at our next State Fair, when I hope I shall not be the only competitor for a prize as I was at Janesville.

In the old country flaxseed is never sown on the same ground, with advantage, but once in six or seven years. Here I would venture it in five, and on rich bottom land in less. It is not an exhausting crop, where there is good farming and a proper rotation of crops. Wheat has been bad since I commenced operations, but it was quite as good on the flax land as any where else. Nothing can better clean and prepare the land for winter wheat than a previous crop of flax.

There is a ready market at the East alone for a large quantity of flax, and the spinners are anxious to encourage the culture out West, as many of them import from Holland, Belgium, Russia, and Ireland, most of their consumption. By the last statistical report I have at hand, I perceive that 990 tons of Foreign flax were imported into the United States, and some new mills have been erected since then.

I am not yet prepared to answer one of your queries as to the profits of flax-raising over other crops, and the information would be of little practical use if I could give it. The management of flax is a trade that must be learned like any other; no matter what the profits may be, they are not to be obtained by every one who rushes into the culture of flax with only paper instructions to guide him. I well remember the outcry raised against the Belfast Society by numbers who failed though following, as they thought, the Society's printed instructions to the very letter; that Society never did any good till it adopted the plan of sending *instructors*, instead of *instructions*, through the country.

I have given you rather a disjointed and rambling story this time, but I hope to have more practical information and statistics for your second volume, meantime with a cordial invitation to all interested in flax to come and see my works, and judge for themselves.

Yours, very faithfully,

JOHN GALBRAITH.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

FLAX CULTURE.

MADISON, December 31st, 1851.

MY DEAR SIR—Having been honored by your request, that I should state my views relative to the introduction into this State, of some new, safe, and staple product, adapted to our soil and climate, I take pleasure in submitting the following suggestions, and hope they may prove of some service to the farming interest of the State, in its present embarrassment.

From the information I have derived from others, and from my own observation, I am led to believe that the cultivation of flax, if adopted as our principal or chief crop, will, at this time, better than any thing else, afford us the relief we require.

A good mellow, pulverised soil, that would be suitable for wheat, corn, or roots, is equally adapted to the healthy growth of flax, and especially is our new and fresh soil in this state, favorable to its production. The seed should be sown broad-cast, about the first of May; from twenty to thirty-two quarts to the acre, if cultivated for the seed only, or if cultivated both for seed and the fibre, one-third additional seed should be sown. When sown, it should be lightly and smoothly harrowed or brushed in. In ordinary seasons, it will be fit for harvesting in the month of August, when the seed is entirely and maturely formed, and nearly, if not quite ripened; and may then be secured, by pulling, or cutting close to the ground, and after being bound up in small bundles, can be well stacked in the field, or placed under cover. The plant, while growing, is not liable to injury from frost.

In Belgium, Holland, and Ireland, I have known as high as thirty bushels of seed produced to the acre; and I know of no reason why our lands may not be equally productive of this crop.

But for illustration, I will suppose we raise fifteen bushels of seed per acre, which should be our lowest average crop, and by a simple calculation, a comparison with the wheat crop, and its relative value will appear.

One bushel of seed will produce two gallons of linseed oil, besides the oil cake.—The scarcity of seed in this State at present will probably make its average cost for the next two years, about twelve shillings per bushel, and the lowest cost one dollar. We have this result:

One acre, 15 bushels	$15 00
1¼ tons fibre, $8 per ton (gross)	10 00
	$25 00

Suppose twenty-five bushels per acre are raised, which will be a fair crop, and suppose the fibre, instead of being carried away and sold in the rough state, is dressed by the farmer at his leisure, the result will be:

One acre, 25 bushels, at $1	$25 00
300 lbs. dressed flax, 6 cents at least	18 00
	$43 00

This conclusively shows that the crop will be a profitable one to the farmer, even more so than wheat; but this is not all—the effect of making it a staple and general product upon the country, is worthy of special notice:

First.—It will require to be established in almost every township or village, a flax-breaking machine, where the fibre may be sold for cash, by the ton.

Second.—It will demand the establishment in almost every settled county, of an oil mill, where cash will be paid for the seed.

Third.—A great variety of linen fabrics are manufactured from the fibre, and the seed may be converted into oil, food for cattle, and medicinal articles.

Fourth.—It gives the farmer comparatively a sure and valuable product, that he may always sell at a certain market price for cash, or exchange with the merchant for goods, a staple that may profitably employ his domestic industry in its manufacture into articles for clothing.

Fifth.—It furnishes to the merchants, or other buyers in the country, an important and valuable article of export, in the form of flax and linseed oil.

Sixth.—It gives employment to mechanics and other laborers in our own State in its preparation for market; and in the two articles of oil and dressed flax, will make a balance of trade in our favor of a large amount.

Within the next ten months, the above advantages of this crop may be, in a measure, realized by this State. Ten thousand bushels of seed should, as soon as practicable, be brought here, to be distributed generally among the farmers of the State, at cost, which would amount to the sum of $15,000. Ten thousand bushels would sow ten thousand acres, which, according to the above average estimate, would produce to the State, in the first year, in seed and fibre, in value $250,000.

During the second year, if we should sow one half of the seed of the first year's crop, at one bushel to the acre, for that year, at the same estimate, there would be produced to the state in seed and fibre, in value, $2,000,000.

Such a result would certainly seem worth securing to the farming interest of this state; and I cannot see what should necessarily prevent it, except it be an unwillingness to make the effort.

We have the soil and climate well adapted to this crop, as has been well and

successfully demonstrated by actual experiment. We have the farming and mechanical labor already here, to be employed in its cultivation and preparation for market; and we are importing into the State for our own use, from other States and abroad, the very articles that are produced from it, amounting, in all, to no inconsiderable sum of money, when we have the facilities to be not only independent, in this respect, but also to produce for exportation. The experience of the farmers in this State, has clearly proved, that the wheat crop is not always sure; and if a crop, there is not always a good market. Consequently there is a necessity that, at least, a portion of our energies should be directed to some other agricultural product; and I know of no plan more feasible or profitable than this. It is a sure crop—comparatively so, at least. It opens and commands a safe cash market. The crop is raised with as little labor, proportionably, as any other, and it can be easily and cheaply introduced at this time.

Some plan could be adopted by neighborhoods, or perhaps by a more general concert of action among the farmers of the State, to procure the seed. After the first season, then this difficulty ends; and the crop is introduced into the State—and that it will afterwards become a staple one, I think any person can clearly see.

To show that all this is not mere theory, without experiment or proof, I am permitted to refer to John Galbraith, Esq., of Mukwonago, in the county of Waukesha—who has had more experience in the culture of this crop than any other person in this country; and who is now, and has been for a few years past, engaged in this enterprise, in this State, at the above place.

I am informed, by a letter from him, under date of November last, that

In 1848,	he raised	20	acres,	a good crop.
1849,	"	96	"	very fine crop.
1850,	"	121	"	dry season, middling crop.
1851,	"	108	"	splendid crop.

Mr. Galbraith gives it as his opinion, that this crop is as well adapted to this State, as to any flax growing country abroad; and he has had an intimate acquaintance with those countries, and is capable of judging correctly.

I have examined with much satisfaction, the flax breaking machine of Messrs. Hatch and Weed, at Beloit, where they purchase the flax straw by the ton, and it is by them rotted, dressed, and sent to an Eastern market. Should the farmers of this country adopt this crop, and use one half the energies in its production now expended upon wheat, the time is not distant when many of our cotton factories will be converted into linen factories, and linen goods be produced as cheaply, and be made as generally useful as cotton goods.

Recent experiments in Europe and in our own country, leave no longer a doubt but that flax can be substituted for cotton; and there is a process and

patent now in use, by which, in one day from the time the flax is pulled ripe from the field, it can be prepared, and in a fit condition for spinning upon any of the flax, cotton, wool or silk machinery of the county. We have a direct and vital interest in the cultivation of this product.

Most respectfully, your obedient Servant,

LEONARD J. FARWELL.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

CULTURE OF TOBACCO.

Milford, November 3d, 1851.

Dear Sir—Your letter of October 18th was duly received, and would have received earlier attention had it not been for my absence from home at that time. You write that you are desirous of obtaining information respecting the culture and growth of tobacco, and also of obtaining some seed for distribution. The culture of tobacco is a business that requires so much attention to *little things* which are all important to the success of the crop, and all important to the new beginner, that I fear I cannot do the subject justice without being too lengthy, but I will endeavor to condense my remarks as much as is consistent with giving a proper idea to those just engaging in the business.

Any good soil will produce tobacco. My mode is to manure clean good ground, and plough in the fall; this exposes the worms, and destroys many of them; the common cabbage or cut-worm is the only worm that has troubled me; I know of no way to destroy them but by hand, hunt, and kill them, wherever to be found among the plants. If this is neglected, a large portion of the plants are liable to be destroyed; they do not, however, work much after the middle of June. The seed should be sown by the middle of March, and will vegetate in from forty to fifty days. I shall sow late this fall, and again in March, as it is all important to get the plants early. Fall planting, I think, will be best in this climate, but it will require much care to protect the plants against the frost in April; plant beds should be placed in a sheltered situation, protected from the north and north-west winds, where they can have the sun during the greater part of the day. Commence your beds by burning brush on the ground; then spade the earth, as for gardening, but no deeper than it has been cultivated before, unless it is very rich. Manure from the hen house is best; hog manure, or well rotted manure of any kind, will answer, but is more liable to give a crop of weeds. Do not make the beds too wide, they are inconvenient to weed; and also

in drawing the plants much attention must be paid to destroying the weeds; take them out when small, or they will injure the plants by retarding their growth; frequent watering will be necessary in a dry time, and great care should be taken in bringing them forward early; the ground should be well pulverized; the bed may be, say three feet wide by thirty feet in length; take a large spoonful of seed and mix with half a pint of dry sand; sow half of it over the bed and rake it in very shallow; then sow the remainder crosswise of the first sowing; by this means you will have seed in for wet and dry weather; then tread your bed crossways and lengthways all solid, and cover with brush plentifully, which will tend to keep the seed moist, and cause it to start early. A bed of this size will furnish plants for from one to two acres, depending on the number of seeds that may vegetate; the brush should be taken off as soon as the plants are up, and when they are two inches high they are fit for planting; then improve every good opportunity to set them as fast as they become large enough. Much care should be taken in drawing the plants, so as not to injure the small ones; the bed should be thoroughly wet and all the small roots preserved on the plants, if possible. It is a good plan to take a table fork in loosing the earth around the roots, but great care should be taken not to disturb the roots of plants not intended to be drawn at the time. When the bed has been drawn two or three times, late plants, and plants to reset, may be drawn by the use of the fork, and nearly all the small fibres be preserved, and they will grow off rapidly. Plough the ground twice, and have it free from weeds and grass; mark your field into squares, measuring three feet on all sides; make a small hill in the centre of the squares, into which you will set your plants with care, so that the water will not settle in a heavy rain and cover the plants with dirt when they are small. In setting the plants, spread the roots and set no deeper than they were in the seed bed; the ground should be well cultivated after the plants have taken hold, and be kept free from weeds; after the plants begin to cover the ground so that it will not do to work it with a horse, they should be hilled, and that finishes the culture, except to cut up the weeds, should any grow, as soon as the buttons or buds make their appearance; and before it blossoms the plants should be topped, leaving from twelve to fourteen leaves on each plant; the suckers will now commence growing from the stock above each leaf, and must be taken out; if suffered to grow, they stop the growth of the leaf, make it thin and nearly worthless. You may know when the crop is ripe by the color of the leaves—the ground leaves will decay, and ground suckers will come out and grow vigorously; also by folding the leaf between the fingers, if ripe, it will break on being pressed together; if too green, the leaf will be thin, and will not break under this operation.

Gathering the crop.—A small axe may be used for this purpose: cut up as much as you can hang in the afternoon; lay the plants on the hill until wilted;

then put the plants of three rows upon the the hills of a fourth row—this will leave room to drive between the rows, and facilitate the loading; the loads should be small, and care must be taken not to bruise the plants. Prepare your building or tobacco house, by putting up, across the building, poles four feet apart, to rest the end of the tobacco sticks on—there should be four feet distance between the tiers of poles thus put up, for hanging the Connecticut seed-leaf.

Of the different modes of hanging tobacco, I prefer "spearing." This is done by having a spear made with a socket to fit loosely upon the ends of the tobacco sticks; the stick must be smooth, one inch through, and five feet long, and have one end sharpened to fit the socket of the spear loosely. Prepare a block by boring a hole to receive the blunt end of the stick; then placing the spear on the other end of the stick, take your plants, and run the spear through the butt end of the stalk, far enough from the end not to split the stalk open at the butt—thus string the plants upon the sticks, being careful not to get them too thick. By this mode tobacco can be handled with care and ease—it opens the stalks, and cures quicker. Another very expeditious way to hang tobacco is, to place poles across the building, as before directed, but nearer together; make a strong twine fast to one end of the pole, then wind it around the butt of a plant, cross it over the pole diagonally, and around another plant, so on until the pole is filled. A ten foot pole will hold about thirty-five plants, and must remain in the building until sufficiently dry, as they are heavy to handle.

Buildings should be made light and airy, to cure tobacco of good color; if cured as above, or where there is a large quantity. The tobacco should be hung three or four days out of doors, and thoroughly wilted before put into the building. I send you only the Connecticut seed-leaf variety; it is the only kind I have that I think will pay; it is a large sort, has a fine leaf, and is used in the manufactory of cigars.

In reference to the profit of the crop, I will say, that much depends upon the quality, and also on the necessities of the farmer, whether or not he is under the necessity of realizing from it early in the season; but, I think, we can safely calculate upon 1,200 lbs. per acre, as an average yield—say, 800 lbs. first quality, at eight cents per pound; and 400 lbs. second quality, at four cents per pound. This price being about one half the market price at this time in New York; and the net products of one acre may be thus stated:

800 lbs. of first quality, at 8 cents	$64 00
400 lbs. of second quality, at 4 cents	16 00
	80 00
Expense of cultivation, curing, and preparing for market	40 00
Making the net profits on one acre	$40 00

This calculation is based on my last year's experience in raising the Connecticut seed-leaf variety; and I am now offered this price at home for my crop.

A large portion of the labor in gathering and curing the crop, can be done at times not interfering with other crops, and labor on the farm.

I am of the opinion that the cultivation of tobacco should not be attempted on a large scale at first; and that two or three acres is as much as should be put in cultivation for a beginning. * * *

Yours, very truly,

H. B. HAWLEY.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

CATTLE.

Webster's Island, Fox Lake, December 25th, 1851.

Dear Sir—Your letter of November 13th, was received, after being subjected to some postal delay; and this reply would have been earlier, but for the wish to comply with your request to furnish a reply on the subject of neat cattle. With this request I had hoped, until recently, to have been able to comply; but on attempting to collect the statistics, which it would seem necessary to embody in such a document, in order to render it interesting or useful to its readers, I find myself entirely at fault, and should have to fall back on my own resources, and thus injure the cause, which I believe to be not only closely allied, but absolutely identified with the prosperity of our State. Thus situated, it will not be in my power to meet your expectation, or my own wishes fully; but I will submit a few remarks, founded upon my own observation and experience since I have been in the country. With this view, the first thing to be considered, I think, is the use for which the cattle we raise are intended; as no prudent, well informed man would think of raising a fine colored, active, and well-matched pair of working oxen from the Durhams—an animal of great size from the Devonshire—or the best points of either from the natives. As well might be expected a good draft horse from the Indian pony. We have different breeds, and these are adapted to different purposes; the common native cattle of the country prevail generally. Many farmers have considered that "a cow is a cow" the world over. These cattle are hardy, vigorous, and withstand the severity of our climate well; but are celebrated for little else. The short horned Durhams are unrivalled for size; and for aptness to fatten, and quantity of beef, are not sur-

passed by any; they also make a large and stately style of working oxen. Yet for fine and perfect matching, quick and athletic step, they are not equal to the Devons. These combine, in a remarkable degree, those qualities which render them valuable to the farmer, which may be seen in the broad loin, round body, fine head and limbs, hair of uniform color, with a deep flank and light offal—together with the best possible quality for our northern climate, early maturity.

With regard to the relative merits of the two breeds for milkers, a difference of opinion has always existed, originating not unlikely in the partiality or prejudice of the breeders of the different races. From the limited opportunity I have had to form an opinion, I believe the Durhams have the advantage in quantity, and the Devons in quality of their milk. But considerable variation will doubtless be found in different animals, as we find to be the case in the native cattle. In selecting from the different races, such qualities as are best adapted to the use for which they are designed, care should be taken to breed from such animals only as partake largely of these particular traits. Then never suffer them to deteriorate, but carefully feed and house them—keeping them constantly improving, not by extravagant feeding, but by bestowing such care and attention upon them as shall preserve these qualities in the greatest perfection.

I am strongly impressed with the belief, that a cross of the different breeds of imported stock already in the country, with the best native or common cattle, will produce a race quite as useful to the farmer, either for fattening, working oxen, or for the dairy, as any of the unmixed, imported stock; the object being the improvement and not the substitution of a new race of cattle. I am persuaded that the natives, constituting as they do almost the entire mass of cattle in the country, must be relied on to form the basis for any great or general improvement, and that crossing with this class will prove a cheap and easy way of improving the present stock. We have many well formed cattle of the native stock; but they are seldom found possessed of the size, color, or activity of the improved cattle. And in consequence of their diversity of color and horns, we find great difficulty in matching our working oxen. A cross with the Durhams does not prove a remedy in this respect; but, as far as I have known, a cross of the Devonshire has been attended with different and better results. I believe if I had in view the raising of working oxen by a cross with native cattle, I should prefer the Devonshire. I have for several years been in the use of a full-blood Devon bull with native cows, which were purchased from Southern drovers, at prices varying from twelve to twenty dollars; taking care to select those of good size, without much regard to color. The result has been most satisfactory, producing either a fine red, or red and white, located in large masses, and entirely divested of the grizzle and speckled character which prevails extensively among the Durhams and native

cattle. The benefit of this cross is beginning to be felt in this neighborhood. There were several specimens of half-blood heifers exhibited at the State Fair, at Janesville, by Mr. Ferguson, of Fox Lake, from cows of ordinary color, but fair size; giving the most decided evidence of the advantage to be derived from a cross with the Devonshire and native stock. For myself, I should greatly prefer this cross with natives; yet if that could not be made, I should, without hesitation, make use of the Durham; by so doing, I should lay the foundation of an excellent cross with the Devonshire, whenever that could be obtained.

Although I believe the crosses above alluded to, must be relied upon for general improvement, in consequence of the extreme scarcity of the full-blood, and higher grades of the Durham and Devonshire; yet every observing man will at once discover great merit in both these fine breeds. Each has its particular and distinct traits; and those who suppose that no improvement can be made by crossing them for the use of the farmer, it seems to me, are mistaken.

The large and heavy Durhams may well afford some diminution in size, if need be, in exchange for the increased activity, compactness, and splendid color of the Devons. There was exhibited at the State Fair, at Rochester, New York, in 1844, (I believe I am correct in the date,) a pair of fine, red, fat oxen, which were a cross of the Durham and Devonshire, the live weight of one exceeding four thousand by a few pounds, and the other falling but little short of the same weight. This is a greater weight than I have ever known from a full-blood of any kind. This, fact, with other evidence which has come within my knowledge, assures me that the cross can be made without injury, and probably to the advantage of both. This cross, or any other, once made, should by no means be extended so as to amount to the practice of breeding in and in. If this bad practice must be adopted, it had better be confined to the distinct breeds; and even then it should be avoided as far as possible. But as every farmer cannot be expected to provide himself with the requisite means of producing these crosses, it would seem that the influence of our Society could not be better directed than in the encouragement among individuals whose taste and circumstances would permit of the propagation of the pure Durham and Devonshire, which I believe form decidedly the best cross, either with each other, or the native stock. This should be extended to every county within the State, where stock is raised to any extent; and would place within the reach of most of our farmers a convenient and expeditious means of improvement, from which, at present, most of them are excluded; and, at the same time, it would be a source of profit to those who would aid in the enterprise. I do not suppose that great progress can be made at once; but would it not be well to direct attention to the subject? The large ranges cattle are permitted upon our uncultivated lands, and our extensive marshes, place us in a position to be the best stock-growing State of this latitude

in the Union, and might enable our smallest farmers to support a numerous herd of cattle at a trifling expense.

The stock-growing interest, I think, have strong claims for encouragement and patronage from the legislature; upon this body our Society may exert a powerful influence, coming, as its members do, from almost every portion of the State, and having among them many individuals of extensive influence, it would seem they might, by suitable exertion, produce an impression that would be irresistable; the more so, as they would have the benefit of precedent from almost every agricultural State in the Union, where a State Society has been organized. The Agricultural Society of the State of New York, if I am not mistaken, received their first impulse from the fostering hand of the State, without which, in all probability, they never would have reached their present enviable position.

Our own State, although young in years, is old in agricultural resources, and may, with more propriety, call loudly for liberal aid from its legislature.

Very truly yours,

MARTIN WEBSTER.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

BUTTER-MAKING.

From Allen W. Dodge, Hamilton, Mass.

Your letter, requesting me to communicate my views on the subject of Butter-making, has been duly received, and I cheerfully comply with the request, willing always to do what I can to promote the interests of the farmers, in whatever part of our widely extended country they may be toiling for a livelihood. A difference of soil, climate, and modes of husbandry, must, of course, exist between New England and Wisconsin. Wherein the difference consists, it is difficult for me to say; it must be left therefore for me to give the management of the dairy here, as it respects butter, (that being the article into which the product of my cows is made) and for your farmers to adapt it to their wants, so far as circumstances will allow. And yet there are certain fundamental points, which are essential to butter-making the world over, and which must guide to success in Wisconsin as surely as in New England.

Good cows are necessary for a good dairy. Indeed, it is labor thrown away to attempt making a business of butter-making, without good cows. Some cows excel for the butter-making properties of their milk, whilst others seem to be

greatly deficient in this respect. It costs as much to keep animals of the latter description as of the former, and of course it is for our interest to keep only the best, or as good as we can procure. How shall we be able to tell, then, good butter-making cows from poor ones? Now there are certain marks of a good cow well known to the experienced farmer, and by which he most usually judges in making a selection—head and face long and narrow; neck slim and flat, not round and fleshy; wide in the loin and deep in the flank; small fore quarters, and large hind quarters; milk veins large; teats middling size, long and standing apart; bags and teats of a reddish brown or orange color, and so also the color of the inner part of the ear—this color denoting the producing of butter of a similar hue. The hair on the bag short and silky, and pointing upward on the hind part, and so up the thigh. The farther up the thigh the hair thus runs and the wider it spreads in an upward direction, the better the cow, according to the theory of Guenon, the French writer; and this criterion is highly esteemed by some of our best judges of cows.

We give these marks, for what they are worth, observing that it is only by long and close attention, that one is able to form a correct judgment of milch stock—and then sometimes the most experienced are mistaken in their opinions. The safest way, therefore, to test the butter-properties of a cow, is to set her milk by itself, till enough is collected for a churning—that will tell you how much butter she will make in a given time and its quality. Cows are found that will yield ten to sixteen pounds per week. A stock of cows that will average one pound of butter a day, in good feed, is a good stock—the thickness of the cream also denotes the quality of the milk. For this purpose lactometers are used; wine-glasses, or glass tumblers may also be filled with milk from your cows, putting each cow's into a separate glass, and the thickness of the cream can easily be seen. Let it be remembered that it is not the quantity, but the quality of the milk, that determines the question whether a cow is profitable for butter-making. The Alderney cow gives but a small mess of milk, but it is extremely rich. The Cream-pot breed of Colonel Jaques, in this State, are famous for the richness of their cream. I have myself seen him take a pan of milk from his milk-room, in the coldest part of the winter, and with a common table fork remove the cream, almost in one mass, into a bowl, and there stir it with the same fork by the fire, till in less than three minutes it was formed into the best of butter. These are specimens of number one cows for butter. On the other hand, cows have been known that give a large quantity of milk, which, with all possible pains, could not be churned into butter. I have never witnessed this fact, but have it from reliable statements.

As to the different breeds of cows, I will not undertake to give a decided preference of any one, as my experience will not justify my doing so. I will only

say that of the foreign breeds, the Durham or short-horn breed, with good pasturage, make excellent cows for the dairy. They are large, and require of course more to fill them, than the smaller breeds; but they have been with me excellent milkers. The native breed—as the stock is called that has been the longest in the country—are so well adapted to our climate and pastures, and have so many valuable animals among them, that they are, perhaps, in more general favor in New England, than any foreign breed. To secure a good stock of dairy cows, breed from the best animals, both male and female; keep the calves well, both summer and winter; they will thus be large enough to "come in," at two years old, and will then tell their own story as to what they can do in the production of butter. If they promise well, keep them; do not be tempted, by an extra price, to part with your best heifers; but if they are ordinary milkers, let the butcher, or any body who wants, take them for what they are worth.

Next to good cows, good pasturage is all important to ensure a profitable dairy. Perhaps there is no want of this in Wisconsin; but here in New England it is the greatest drawback we experience, especially in those portions which have been longest settled. By continued grazing, pastures are exhausted of much of their fertility. The land becomes "bound out," as it is called, and not unfrequently overrun with mosses. But little has yet been done here to renovate these impoverished pasture lands; but the attention of our farmers is now being turned to this important subject. Top-dressings of compost manures, of ashes, and of gypsum, are applied to such lands with marked benefit. But it is easier to keep good pastures in good heart, than to retain such as are impoverished, and it is altogether wiser. Let the farmers of Wisconsin, therefore, look to it, and not over-stock and over-feed their pastures; let them, betimes, renovate such of them as begin to deteriorate; let them procure seeds of honey-suckle, and the perennial pasture grasses best adapted to the soil and climate, and sow them where they think they are needed, or where they will give a greater and richer run of feed. Thus, the product of the dairy will be materially increased, and the thrift of the farmer be sure to follow.

All grazing animals, and milch cows especially, must have water as well as grass. Clear running water, either in the brooks or from springs, is best adapted to this purpose. Muddy water may satisfy the thirst of cows, but will not be drank in such quantities as that which is clear, nor will the flow of milk be so great and pure from the former as the latter. There are some pieces of pasture land, however, wholly destitute of water, and then the want must be supplied by artificial means. This may be done on plains by making excavations, and lining the bottom and sides with clay, so as to retain the rain water. But if there are hills in pastures, the better way is to dig a well on the brow of a hill; and as springs are always nearer the surface in such places, than in plains, you will soon come to water.

Stone over the spring, or stone it up; then dig a trench in the side of the hill to reach the bottom of the well. Stone up the trench and cover it with earth; or a trough may answer the purpose, when buried in the ground. Where the water issues out, there dig a watering-place—water may, in this way, be led to the cattle-yard and house, and also used for irrigation. Besides good watering places, cows need shade in hot weather. And if there be any dearth of trees in your pastures, go to work at once, and plant them out; they will be growing while you are sleeping, and will soon shelter your cattle from the fiery rays of the summer's sun.

Having thus "beat the bush," and not altogether uselessly it is hoped, I come now to the consideration of the subject more immediately in hand. Your cows have come home from the pasture at night with udders well filled, and are quietly ruminating, while the boys and girls are getting ready to relieve them of their liquid treasures. Let this operation be performed with all care, and gentleness, and fidelity. Dirt and dung dropped into milk do not enhance its value, at least for most people's taste—be careful, therefore, and not make a compound of the contents of the milking pail, such as the dogs would make a wry face to swallow. The peculiar flavor which some butter possesses, is often acquired by want of care in milking. Be gentle too, in milking. If the cow kicks, or slaps her tail in your face, you will not mend her manners by flinging the stool at her head, neither will you ease your pain by kicking her in return. Mild measures and patience with all dumb animals, is the grand secret of teaching them docility. Be faithful and milk quickly and tenderly, and strip, and strip, till the last drop is taken away. These last drops—these strippings—are the richest parts of the milk and should carefully be secured. Besides, by an opposite course, the cow will be dried up, long before the proper time.

Before the milk is taken to the milk-room, it should be cooled. To effect this object, it is usual to let it stand in some cool place, in the pails. In some large dairies, however, it is strained into a large vat, which does not stand in the milk-room; and when considerably cooled, is drawn off into pans, which are set in their appropriate place. If milk, warm from the cows, is taken in large quantities to the milk-room; it imparts to it a higher temperature than is suitable for the keeping of the milk till all the cream rises. The pans—those used in this region are now always of tin, though formerly earthen ones were common—should not be filled more than half or two-thirds full: the hotter the weather, the less milk should be in a pan, as it will cool the quicker. The milk should stand in these pans, carefully arranged on shelves, until all the cream is risen, when it is skimmed. The time varies, according to the weather; from thirty-six to forty-eight hours, may be taken as the usual period, with our best butter-makers. In the hottest weather, the milk sours before all the cream is risen. As

soon as it is discovered that the milk is soured, the cream should be skimmed off, as it is injured by remaining in contact with it. As little milk as possible should be taken off with it, in the process. By some experienced persons, it is thought this souring of the milk is decidedly injurious to the quality of the butter; but in the hottest of the weather it is extremely difficult, in the milk-rooms that are common in New England, to keep milk so as to prevent its souring before the cream rises. When skimmed, the cream is kept in stone or earthen pots, in a cool place, till it is churned—care being taken to stir it daily, to prevent its moulding and acquiring an unpleasant flavor.

Now as to the milk-room, where shall it be, above or below ground? This is a highly important question, and perhaps the quantity and quality of the butter made on a farm depends more on the proper location and construction of the milk-room, than upon any thing else. In the neighborhood of Philadelphia, the very best butter region in all the country, spring houses are the most approved. The floor of these is of brick or stone, and the water is admitted at one end, and flows over it, so as to keep the pans immersed two or three inches, and passes off at the other side, the depth being governed by a gate through which the water has its outlet. This, in hot weather, must be an excellent arrangement. But as suitable springs are not always conveniently situated for this purpose, and as butter-making comprises only a part, and generally but a small part, of the farm operations in New England, it is usual here to build a milk-room on the north side of the cellar, flagging it with stones or brick, and carefully pointing the walls with mortar, so as to keep out all vermin. Shelves are placed around this room for the pans, and in the hottest weather the pans are placed on the floor, as being cooler than the shelves. Some persons make a practice of dashing cold water occasionally on the floor to cool the room—a worse practice could not, perhaps, be devised. The water leaves a moisture, which is extremely detrimental to the quality of the butter. In fact, the dampness which is generated in all cellars and under-ground vaults, greatly impairs the value of such places for milk to be churned into butter—what is gained in coolness, is over-balanced by dampness. The butter acquires a flavor—a taint—that no after skill in management can change or destroy.

In this conviction, it is now the practice of some of our best butter-makers to keep their milk above ground. For this purpose, a suitable room is provided in the shadiest and coolest part of the house—one, into which hot air has but little access, either by the rays of the sun, or by passage ways leading out of doors. A window on the north side, let down at the top, during the night, will afford sufficient ventilation and serve to cool the room. It should, however, be covered with gauze or wire-screening, to keep out insects. In such a room, milk may be kept without souring till the cream rises, the most of the summer. In extreme

not weather, resort may be had to the cellar as the safest place, under the circumstances. From a fair trial of both ways of keeping milk, I have no hesitation in giving it as my opinion, that a cool room above ground is decidedly preferable to one in the cellar, and that every reasonable effort should be made to provide such a room, and to make it cool by shade trees and other means, where it is desired to have sweet and luscious butter. I have no doubt that by the exercise of ingenuity, a house, impenetrable to heat, might be built, and at small expense, somewhat after the fashion of our modern ice-houses, that in the hottest weather would keep milk sweet till the cream has all risen. These houses are made with double sides, about a foot apart, and the space between is filled in with dry tan—a non-conductor of heat; the roof is left with a space aloft for ventilation, while a double door precludes the admission of much hot air, on entrance to the house.

In the milk-room the greatest cleanliness is indispensable. It being a cool place, sometimes it happens that other articles besides milk, cream, and butter, are deposited in it for safe keeping. But this is ruinous economy. Flesh and fish may keep there, but they taint the atmosphere, and leave a real sting behind, as the consumers of butter, to their sorrow, sometimes find. A milk-room should be used only for its legitimate purposes, and not made into an omnium-gatherum. So, too, the utmost neatness should be used in all the management of the dairy—carefully clean and scald the pans, the pails, the jars, and scrub off all droppings of milk from shelves and floor in the milk-room. A drop of milk in a few days grows rancid, and communicates its effluvia to the whole room. But it would be difficult to enumerate all the ways in which the dairy-maid should exercise cleanliness; suffice it to say, that if she has not a love of neatness, either innate or acquired—a pride in having every thing clean and nice, and in being herself the pattern of neatness, she has not the proper qualification for her duty—she has mistaken her calling, and the sooner she retires from it, unless she turn over an entire new leaf, the better for her, and the cream, and the butter, that pass through her hands.

In the large dairies of New York, the milk is churned, without being set for the cream to rise. The advantages of this practice, I am unable to treat of, as it does not prevail in this section of the country. Cream only is churned here. The sour milk is fed out to swine, and for weaned pigs no better article of food can be used. In a dairy of ten or twelve cows, it is more usual to churn but once a week—though some farmers churn twice. In hot weather, it is a great object to have the butter come hard, as it can be more conveniently managed, and is actually better, than when it comes soft. The cream, therefore, must be well cooled before churning. It is sometimes placed in vaults dug in the cellar, and sometimes lowered in cans into the well. If the cream is not cooled, it is

next to impossible, in very warm weather, to make the butter come hard, by the use either of ice or cold water in the churn, or around it. The thermometer churn, which is so constructed that cold water may be kept between the two sides of the churn, is but a partial remedy for the evil. The water will be more likely to become warm, than the cream to become cold—still, if the cream is first cooled, the cold water operates to keep it cool.

As to the varieties of churns, there are as many almost as of ploughs. Many of them, and both of them, are mere innovations, and not improvements. In churns, there are two principles, the crank and the dash, which makes the principal difference in them. Each of these has its advocates; though the crank seems in New England, at least, to have superseded the dash-churn. All things considered, it may be doubted, whether there is any better churn than the old fashioned barrel-churn. The slats on the arms, however, should always be flat and not round, as the former offer more resistance to the cream, and create a greater agitation of it than the latter. Where the dash churn is used, its operation may be facilitated, by attaching the handle with a string to an elastic pole, inserted horizontally to the walls above, so as to operate as a lever in raising the dash. Whatever description of churn is used, it should be such as will admit of the butter being easily taken from it, and also of its being easily and effectually cleansed after using. Here, as in every part of the process, neatness is the cardinal virtue.

When the butter is taken from the churn, it is worked, salted, and set in the milk-room for a day, when it is again worked over, so as to get out all the buttermilk; and, with us, put up in pound lumps for market. Some people practise washing the butter in cold water before taking it from the churn; but the more general belief is, that water injures the flavor of the butter, and impairs its keeping properties. The usual method of working the butter here, is with the hands—hands which must be clean and cool. The contrivances of brakes and other butter-workers, have not yet gained much favor with our dairy maids; if our dairies were larger, the necessity of the case might compel their introduction. The quantity of salt used is about an ounce to the pound; though the quantity is not in general regulated by weight, but by the judgment of the dairy maid. Butter, when it comes soft, requires the use of more salt than that which is hard, as it will work out with the buttermilk. There are so many tastes in the community, that it is no easy task to salt butter so as to suit all. The great point is to salt it enough to have it keep, without salting so much as to injure its flavor. Purchasers of butter are rather averse to buying too much salt in their butter.

Butter that is packed down for future consumption, or for sale, requires a different management. It requires more salt—and to ensure its better keeping, a little pulverized loaf sugar and saltpetre, is sometimes added to the salt. It is usually put down in jars or tubs, and in layers, between which is a sprinkling of

salt. The butter should be packed snugly in the firkin or jar, covered with a cloth, and then with the proper cover of the vessel. It should be kept in a dry and cool place. If it be kept in the cellar, it may be elevated a little from the floor by pieces of wood, to prevent its imbibing the moisture, and, consequently, the taint of the floor. There are but few cellars that will keep butter well through the summer. In the vicinity of a market it is best to sell it as it is manufactured, and not incur the hazard of damage by keeping it on hand. Still, it must often happen that no immediate sale can be effected, and then the judgment and experience will be called into exercise, to preserve the butter from spoiling. As I have little or no experience myself, on this point, I forbear to offer advice lest I might mislead unintentionally those who might follow it. One thing only I will observe, that no matter how well the butter is made in other respects, if buttermilk is left in it, there is always a liability to become rancid and offensive. Salting will not prevent its spoiling, unless it is made so salt as hardly to be eatable. Nor will all the care you may use in packing and storing, keep it from that deterioration which is sure to arise from the latent buttermilk.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

THE NORTH-WEST FOR FRUIT AND FRUIT TREES.

By F. K. Phœnix, Delavan Nursery.

Fruit is not only one of the greatest luxuries, but one of the chiefest necessaries of life—hence, fruit-growing is intrinsically one of the noblest, most important of all arts or occupations—whether viewed theoretically or practically, in the light of history or science—every where we find it indissolubly linked with the main-spring, the fountain-head of all human accomplishment—life and health—and hence an integral part of the great first problem of human sustenance.

Fruit-growing has been seriously neglected among us—hence we have suffered socially, physically, and pecuniarily, in consequence—and must continue to suffer until this prime want shall be supplied. The direct annual tax, self-imposed upon us of the North-West, for green and dried fruit, cannot be less than $300,000, which even then procures us not one-twentieth part of a supply—thus leaving, with all this great outlay, the popular demand unsatisfied—producing an immense amount of indirect but not less positive suffering and loss in the way of discon-

tent, drugging and sickness, which might now have been done away, or greatly alleviated, had the requisite care been taken in season. And not only so, but as matters have been this season, this region, had it been provided with bearing-orchards as it might have been, could not only have supplied its own inhabitants measurably with fruit, but perhaps could have been induced, by the high prices offered, to part with a considerable quantity for exportation to adjoining sections where the crops of fruit have been almost totally destroyed by late frosts, while ours were uninjured. Even a few bushels of apples sold from each farm, at one or two dollars per bushel, the prevailing rates, would have strengthened wonderfully the broken staff of hedge-row dependence. Granting that this is asking too much, considering the recent date of the settlements here, yet still it may well be adduced and strongly urged as an incentive to prepare ourselves to take advantage of similar opportunities in future. True, there are many and important interests pressing upon us, but is not this especially worthy of increased attention?

With these few preliminary observations we shall proceed more directly to the details of our subject; though, had we been writing a few years earlier, it would have been our first duty to devote considerable time to a discussion of the question, whether fruit could be grown here at all or not. This query having been, as we think, in view more especially of the past season's crop and public displays of fruit, popularly and properly settled in the affirmative, it is deemed unnecessary.

In discussing the horticultural merits of any particular locality, the climate and soil are to be first considered. As they are more or less favorable, so will the business of fruit-growing be more or less successful. Aside from them there is to be taken into the account but the one consideration of profit, depending upon the market or probable demand for fruit.

The climate of Wisconsin, and the Great West generally, is undeniably a peculiar one, differing considerably from that of the Eastern States or the Old World. Its chief, distinguishing peculiarities are to be found in its sudden changes and great extremes, which are occasioned by our brilliant suns, and the prevalence of our winds, which in turns may owe their power to the champain surface and far inland position of the country. The extreme range of the thermometer over a large portion of the Great West is not less than 120°—here N. lat. 42° 40′ it is from 94° in summer to 26 below 0 in winter, though it rarely sinks so low—and the usual range is from about 92 above to 10 or 15 below 0. The variations occurring in the wetness or dryness of the seasons are also great, and the respective periods sometimes of long duration. The proportion of windy days, it is believed, is unusually large, though the winds are rarely so powerful and destructive as at the East. In addition to these should be named, as most trying and injurious to the roots of young, tender, or newly planted trees, the utter naked-

ness of the ground through some winters, especially when accompanied, as it sometimes is, by frequent freezings, and thawings, and excessive dryness.

To vegetable as to animal life, more particularly in its first stages of development, these changes and extremes are very trying—far more so than a regular, even temperature, though it may be that of prolonged, severe cold. Repeated freezings and thawings are more injurious than a single one—a windy cold atmosphere, more piercing and penetrating than a still one of the same temperature—a dry cold wind more withering than a moist cold one—a glaring, intensely brilliant sunlight, more powerful than a feeble one—and all, as remarked above, more trying to young plants than older ones—to fresh, rank, unripe growths, than to ripe, well-matured ones. Hence young or tender trees, or those newly planted, will be more subject to injury, whether in the nursery or the orchard, and will therefore require more care than older and better established ones.

In the light of these few simple statements, we will endeavor more particularly to define the injuries to which our fruit trees are exposed in and from this climate, with what we consider the best means of prevention or cure. But first, it should be remarked that the soil, and climate, and cultivation, exercise a very strong, mutual, responsive, or modifying influence in their combined effect or operation upon the growth and hardihood of plants. Most obviously a bad soil would materially aggravate the evil effects of a bad climate, while unskilful management would develop them to the very utmost—and *vice versa*. The soil and management being measurably under our control would therefore present the most promising field for our investigations and remedial efforts, which, if properly directed in those departments, will be found very powerful correctives to the evil effects of the climate.

The forms or varieties of injury to fruit trees from cold, may be distinguished as follows:—1. Bursting of the bark at, or just above, the surface of the ground. —2. Heaving out of the roots by freezing and thawing of the ground.—3. Dry freezing at the root.—4. Mechanical freezing down of the extremities.—5. Heart-blight, or a corruption of the unripe juices and tissues of the tree, more especially of the heart-wood, during winter.—6. Sun-blight.—7. Destruction of the blossom buds of certain tender sorts during winter.—8. Destruction of blossoms or sets by late spring frosts.

1. This is well known among Western nursery-men and orchard-planters, and is, we believe, peculiar to the apple and the pear while young; more especially certain tender sorts *when grafted on the root*. The injury is generally done by the first severe frosts in autumn, rarely in the spring; the bark being ruptured longitudinally from one to six inches in length, near the surface of the ground. The delicate fibres of the inner bark, and the sap-wood, are thus exposed to the alternate freezings and thawings, until they become more or less dried; and, in severe

cases, quite around the circumference of the tree, effectually girdling it—killing the top, of course, and enfeebling the root. If not fatal, it produces a scar or wound at that most vital point, the base or collar, always more or less unsound or injurious. The immediate occasion of this evil is, doubtless, the expansion of the freezing sap, occurring perhaps on this wise: when the first severe frosts of autumn come, they, of course, chill and stop the circulation of sap, first in the extremities, while it still continues in the bodies; progressively, however, it is checked above by the frost, until finally the ascending current accumulates at the surface, and so abundantly, that, when frozen, an expansion and rupture of the vessels must ensue Thus the extent of the injury, or of liability to it, would seem in direct proportion to the activity of the growth and circulation when those frosts occur—which in the case of any given variety, will prove an infallible rule or test; though late growing kinds do not always suffer the most, which is, perhaps, owing to the difference in the thickness or toughness of the bark. Obviously, then, whatever tends to promote this late rank growth, as, for instance, late cultivation, or planting on low, rich, moist soils, should be carefully avoided. In the case of root-grafts, of one or two seasons' growth, it is sometimes very severe, and is frequently combined with the four following varieties of injury, especially in severe winters following late warm autumns. To prevent it during the first winter, when trees are most liable to it, it is recommended to nursery-men generally, whenever it prevails, to take up their root-grafts in the fall, and lay them in by the heel over the first winter. But, firstly, let them avoid most carefully root-grafting those kinds which are known to be tender on the root, both for their own and their customers' sakes. The present practice of many, who graft all varieties indiscriminately on the root, justly tends to bring the whole class of root-grafted trees into disrepute—*which result, however, as a candid, honest member of the profession, or wishing to be, we shall not,* with our present views, *so much regret, though we dislike the means used; entertaining, as we are forced to do, from all our observation and experience, an increasing distrust of them as a class—whether their hardihood or productiveness be considered—especially in severe climates, or unfavorable locations.* We say this, that, as a nursery-man, we have in obedience to the prevailing mode of propagation, and the popular preference, raised mostly root-grafted trees for sale—and expect to do so while our customers demand them. In the mean time, candor requires the above expression of opinion, which we beg to couple with the earnest hope, that the whole matter be most profoundly investigated. It were foolish to deny that root-grafts will make bearing trees, and, in many instances, perhaps nearly or quite as good ones as any others; but what we claim is this, that most risks in the climate and soil, as to the vigor, hardihood, and productiveness of the trees, are enhanced by root-grafting as compared with stock-grafting; or, in other words, that the hardiest,

most productive and valuable trees, will be those worked on seedling stocks—and the higher up the better, doubtless, so that merely the bearing portion of the tops be improved; because, as we think, seedling trees possess the most elements of hardihood and productiveness. If this be correct, every portion of the seedling stock that is abstracted, would tend to lessen those qualities. Here, however, as in many similar cases we are obliged to compromise. Allowing that seedlings are the most hardy and productive, we do not like their product, and hence graft them. So in the case of entire seedling bodies and main limbs, viz., those which have the lower portion of the stock seedling, and the rest improved—though the former class may be a little better, yet the cost and trouble, and risk of grafting over whole tops, are so much greater than in stock-grafting while young, that the latter, on the whole, is as a general thing much to be preferred—at least with all passably good growers. Very feeble sorts should always be worked at standard height, and on the strongest stocks. To return from this partial digression, should the nursery trees burst much the second fall, it will be of great service to throw up a ridge of dirt along the rows, as high up as the bursting extends; to be done *just before winter sets in*, or about the 20th November; but not early in the fall, as that would only aggravate the evil, by causing the trees to burst higher up. This dirt to be removed early the next summer. This practice of heaping up dirt in the fall, around the base or collar, cannot be too strongly recommended for young orchard trees when newly planted out, and until they get large and well-established. It not only neutralizes the evil of bursting, but protects the trees from the ravages of mice, and the roots from the repeated freezings and thawings. It also forms an excellent protection against

2. The second variety of injury, which is simply the heaving out of the roots by alternate freezing and thawing; occurring mostly in the spring, and on low, moist clayey ground, which should therefore, and for many other reasons, be avoided as far as possible in making permanent plantations of young trees. For use in the summer season alone, such ground may, if not too wet, prove valuable.

3. The destruction of the surface roots by repeated freezing and thawing, when the ground, by long and naked exposure to the sun, has become dried or cracked open.—This is sometimes quite troublesome, especially to young trees on southern slopes and dry soils, as raised beds or sandy knolls. When not fatal, it greatly weakens the roots, often causing them to become "black-hearted." This may be wholly prevented by mulching, or sowing oats (among nursery trees) about the middle of August; a most admirable protection, only that it sometimes becomes a haunt for the mice; for which also we have a remedy, that in at least one thorough trial proved quite effectual. It is simply to provide food and haunts more congenial than they find among the trees. Let piles of straw be

provided in different parts of the nursery, with plenty of corn under them, and we doubt if they would stay in the grass, and gnaw the trees for a subsistence. In the spring, remove the straw and destroy the mice. Where mulching is used, it will not be necessary to sow the oats; and if the refuse grain or weeds grow up through the mulching, another coat of straw can be added; or among wide rows, the straw, weeds and all, ploughed under.

4. A mechanical freezing down of the extremities—a well known form of injury from cold, to which most trees and plants are more or less subject; but more espeeially when they make a late, rank, unripe growth. Hence the great preventive to this, and, in fact, *the grand desideratum, the neplus-ultra of horticultural success in a severe climate is to secure a firm, ripe, mature growth, with a perfect terminal bud at the end of every shoot—which in some autumns here can never, or with great difficulty, be secured on young trees if grown on a poor, weak soil, or a late cold soil, be it rich or poor.* This form of injury is harmless on the apple compared with the next one, though the apple and most fruit trees are subject to a troublesome modification of it, occurring when a late growth is followed by a severe winter, which, though it may not kill the branches, so chills and enfeebles their extremities, that the sap on the return of the growing season will not flow freely and strongly to those extremities, but prefers to push out new shoots from below, thus causing many troublesome sprouts, and giving the top a dwarfish, stinted appearance. This can doubtless be aggravated by planting on bleak, exposed situations, where the winds are more piercing and drying. Hence the importance in this windy country of *suitable protection* in the way of woodlands or artificial screens around orchards and nurseries, more especially on the N. and W. These, for many reasons, *cannot be too strongly urged* upon our cultivators, and are very easily grown from the peach, the locust, or the abele—the evergreens when "got up" are far preferable. The cultivation of trees should utterly cease by the first of August, unless the trees are to be taken up in the fall, when it may be continued till the first of September, with perhaps, even in that case, rather doubtful advantage. When the growth is inclined to be too late, great benefit may be derived from clipping off the ends of the shoots from one to four inches during the first half of October.

5. Heart-blight—the corruption of the heart-wood, or pith of fruit-trees, more particularly the apple—caused by the frost, or alternations of freezing and thawing, producing a chemical change or decomposition of the unripe sap in the tissue, thereby rendering it poisonous and unfit for circulation. The prime cause would then seem to be an immature growth, because other things being equal, if the growth were perfect the extremities would naturally suffer first, whereas the seat of this injury is the heart-wood, or pith. This fact would seem to indicate, that when a late growth is stopped by frost the sap gathered at the heart, or that the

heart-wood was last to ripen. Certain late growing, tender sorts, and the latest, rankest growing trees of any particular sort are most subject to it, *and when of but one or two season's growth*—root-grafts are also more subject to it than seedlings, and are also more incurable. Thus we see the great difficulty in rearing fruit trees here; to winter them successfully during the first few years of their growth until the wood becomes hard and firm—the trees acclimated and established—after which there is, comparatively speaking, but little difficulty.

The outward manifestations of this injury are—a feeble growth at the extremities, with a strong inclination to throw up new shoots from below, often from near the base of the tree—an unnatural enlargement of the one or two year old wood, the bark turning dark, especially around wounds as in trimming, which canker and turn black. The oozing out of the sap, through such wounds, is doubtless often caused by this injury. If the tree be cut open the heart-wood will be found more or less discolored, with more or less inclination to decay. Where the injury is severe it extends quite through to the outside, and kills patches of the bark, especially around forks or wounds made in trimming or grafting. If not too badly injured, the decomposition and decay of the wood progressed too far, the tree may entirely recover, especially when of hardy kinds, and the following summer and winter are favorable. When it is severe, it is best to let the sprouts grow from near the ground for two seasons, when the old stump and all the sprouts, save the best one, should be cut away. Thorough cultivation, and washing the old bodies with soft soap, will soon show whether the tree prefers them or the new shoots, which on young trees are often the best. This variety of injury is greatly aggravated by severe or untimely pruning—the diseased sap and tissues being thereby exposed to all the pernicious effects of the sun and wind, and is greatly relieved by not pruning at all—that is to say, a lot of severely pruned trees will suffer much worse than a lot of trees pruned slightly, or not at all—it matters not whether the pruning be done the spring before or after the winter which occasions the mischief. This fact brings to light another most fruitful evil in our "*management*"—excessive pruning—the most laborious and profitless, and ruinous of all our operations. Were it possible to avoid them we would never, in this climate, have a single scar or mark of a knife on the bodies of our trees, especially during the first few seasons, until the wood gets hard and firm, when they heal over with much greater ease—with much less danger of cankering and decay.

6. Sun-blight.—A destruction of the bark on the south or south-west side of the bodies of trees in the winter, by exposure to the sun's rays while frozen—thus alternately freezing by night and thawing out by day. Most trees with tall, smooth, naked trunks, are subject to this in clear cold winters, but the Heart or Bigarreau cherries are most liable to it. Full, warm, southern exposures, as the

south side of a hill or building, are therefore to be avoided, but most of all would we avoid tall naked trunks which are unspeakable unsightly nuisances—most senseless, ridiculous violations of Nature's economy, *especially in the West*—for which, however, in hard winters she fails not to take ample satisfaction. Far North, or in very severe or exposed locations, sheathing the bodies with straw will help; but above all, let the bodies, *the single trunk* portion of our fruit trees be short, not exceeding two to four feet to the main forks, which can be trimmed higher up afterwards, if desired, so as to bring the bearing part of the tops at their present height. We do not advocate the practice of having the lower limbs spread out, on or near the surface of the ground—as, in that case, the lower limbs would probably be unproductive, or if they did bear, the fruit it is to be feared would, especially in dull seasons, be wanting in flavor—but let the trunk, which is the grand artery for the transmission of the juices from root to top and top to root again, through which more especially they have to run the gauntlet of all unfavorable influences; let *that* be shortened as much as is consistent. What that precise point is, we are yet not fully satisfied, but *know*, if we know any thing, that it is much below the common height of trunks. But even if disposed to try our hand at getting up such things we should by no means take the common course of trimming to the full height *so soon*, whereby roots, bodies, and tops, are all starved and stinted. Our only care would be to keep a central, leading shoot, leaving on the side limbs as essential to the growth, until there was a strong, stocky trunk. If then trimmed up, and all large wounds waxed over, there would be some chance of getting a tree.

7. Destruction of the blossom buds of the peach, plum, and heart cherries, during winter, either by intense cold or severe freezing, after a warm spell, has started the sap and expanded the germs.—When the mischief is done, it may readily be detected by cutting open the buds at the base which shows the little germ lying in the centre blackened and killed. This, in the main, is perhaps more irremediable than any other injury from cold, though the liability to it is rather lessened by avoiding low grounds, southern slopes, and a naked surface under the trees. In a small way it might, perhaps, be prevented, if the tops of the trees were kept low by covering them up with straw or stalks. Dwarf trees would, of course, be far more manageable, and hence better on that account, so far as they will answer here.

8. Destruction of the blossoms or sets by late spring frosts. Well known and more or less prevalent in all parts of the country—perhaps as little in the West as in most sections. The most that can be done is to avoid low grounds and southern exposures. It is said that late frosts have been successfully and profitably kept off by burning piles of damp straw and brush among the trees during the frosty nights; the smoke and heat, together with the currents of air caused

by the fires have quite prevented the frost from settling. The banks or close vicinities of streams or lakes are counted valuable for orchards, on account of the fogs which often rise from them during frosty nights late in the spring, whereby the frosts are kept off.

The soil of Wisconsin, and the North-West, presents a considerable variety both as regards the surface soil and subsoil. In the surface soils we find all varieties, from the almost pure muck or peat of the swamp or marsh, to the heaviest clays and lightest sands. The subsoils are not less various, comprising all shades, from the most porous sandy or gravelly bottoms, to those of solid clay or rock. In such a variety, it were singular, indeed, if so far as soil is concerned, all tastes could not be suited, all varieties cultivated—which is, indeed, the case. Were it not for our climate, all fruits pertaining to the temperate zone could be produced abundantly on our soil. But there are some soils more favorable than others for fruit, or certain kinds of fruit. The precise soil that we would prefer, would be a deep, warm, sandy loam, resting upon a solid, compact clay, or rock bottom, so as to prevent leaching. The most of our prairies have a surface soil, somewhat similar to the one we have been describing; but some, together with much of our openings and timber land, have but a small proportion of sand and vegetable matter, whence clay predominates. This latter class of soils, when resting on a porous subsoil, are apt, when long cultivated, to lose their vegetable matter, and bleach out, finally becoming comparatively cold and lifeless. Hence, it would seem objectionable to work such soils too long and constantly, as when exposed by cultivation to the mechanical action of the sun, wind and rain, they part much more rapidly with their fertilizing elements. If undisturbed, as in the case of pasture or timber lands, the leaves, grass, tops and roots, form a barrier to the operation of these dissipating influences; and thus the surface soils would increase in richness, if not too closely pastured. Such soils, when cultivated, should be ploughed deep, and, with hoed crops, have the surface often stirred to prevent injury from droughts, to which they are quite subject, when exposed to both leaching and cultivation. They are, therefore, most productive in wet seasons; though there is about them, in such seasons especially, a very troublesome tendency to pack and bake, if left naked, which is by no means advisable in the horticultural management of them, where mulching can be had. On such soils, when not too destitute of vegetable matter, the growth of trees or plants, including perhaps most farm crops, though often rank enough, will nevertheless be later and weaker, or more watery and imperfect, less firm and mature, inclining to the production of straw or wood, rather than grain or fruit; and the longer they are worked the more so they become, because of their increasing weakness and coldness. When new, or filled with vegetable matter, they are both strong and lively, and if we would keep them so, we must be very

careful not to waste unnecessarily that vegetable matter. Let us return as much to the soil as we take from it, and it will rather improve on our hands. On this point there is, doubtless, more practical fatal ignorance, than on any other of equal importance that can be named. It is readily perceived, that stock of all kinds must be cared for and kept up—that garments, and tools, and buildings, must be repaired and renewed; but our poor yet bountiful old Mother Earth can be worked hard not only "week in and week out," but "year in and year out," generation after generation, without an ounce of care or provision, unless it be a poor mouthful of weeds or stubble too worthless to rob her of—though oftentimes this, in the sublime height of our folly, is handed over to the devouring jaws of that arch enemy, FIRE! The least, then, that could be done to keep up these unspeakably precious stores upon which we are all dependent, would be to return most religiously every spare portion of them back again. What stock, what store, what "pile" so large, that if always subtracted from and never replenished, will not eventually become utterly exhausted, and its owner beggared, if dependent on it? He well knows that Dame Nature has to pay the first cost of settling new countries; that capital in them is scarce, and labor high—requiring, therefore large drafts upon her long-treasured hoards; that, with their poor markets, in those new countries, an English or even Eastern style of farming throughout, would never pay. Yet it does not follow, that our present shiftless, wasteful style is necessary, even under all our disadvantages. Tell me now, can we afford to raise two crops on our land, or rather one of weeds, and only half a crop of grain, instead of one good clean crop of something valuable? Had we better try to work so much land, that we can work none at all right? Had we better try to raise one staple crop alone, and that one the most uncertain and unprofitable of all—and, in so doing, be compelled to buy abroad, and import a thousand necessaries we could just as well raise or manufacture on our own soil—as fruit, cheese, linseed oil, paper, cordage, and (if we must have it) tobacco; to say nothing of linens and woollens, and the endless variety of manufactured articles in use. Can we afford to burn up our straw heaps, and let our heaps of manure waste away year after year, as is now generally practised? To come still nearer home, can we afford to pay annually from $20 to $100 per family, for those worse than useless articles, liquor and tobacco, tea and coffee, especially when "positively too poor to pay fifty cents or one dollar a year for an agricultural newspaper?" Can we, as parents, afford to rear up families of idle, worthless, *genteel* sons and daughters to burden our old age and society with—to play the part of drones or leeches, in this busy, progressive age, when LABOR is coming to be respected for its own sake, as, indeed, it must be in a true, lasting Republic.

But we are, perhaps, digressing again—though most of the above mentioned errors bear proportionally as hard on horticulture as agriculture; as starved,

neglected soils or tress can no more produce profitable crops of fruit, than starved or neglected corn-fields will good crops of corn; while a thorough, enterprising farmer will strive to attend to all aright. O, the blessings of knowledge and industry, of enterprise and economy combined! Who would not enjoy them, and avoid the multiplied curses of ignorance and indolence, though ever so genteel. And where are our schools that teach these doctrines to our farmers and mechanics—where science and practice are combined to prepare them for their arduous tasks in life; and where I might ask, in fact, is the High School or College that does not virtually inculcate other and contrary doctrines—that the practice of manual labor and thorough economy is undignified and degrading. And while this caste distribution of all the advantages and perquisites of education prevails; while that knowledge, which is power, is denied to the many in their chosen, all-important avocations, what hope can there be for them? Alas, for poor human nature doomed, as it apparantly is, ever to run the same weary round—the many, it would seem, must be ignorant and poor, hewers of wood and drawers of water for the few rich and noble; and that, despite of changes and revolutions, of democratic declarations and constitutions. But *here*, in their sovereignty, let not the many complain, though they behold the sceptre departing from them, *if they will have it so*—if, at every step, *they themselves* uphold this state of things; this social degradation of labor, this unholy divorce of manual labor from science and popularity; if daily, continually, they applaud and endorse, apparently for its own sake, idle, empty-headed, white-handed gentility—let them not complain if demagogues bear sway—if farmers and mechanics are not only practically ineligible to office, but positively incapable of properly making or administering laws. "As we sow, so must we also reap." That bondage which is self-imposed excites no sympathy, though it be the most bitter, as it is, the most hopeless of all.

But the remedy is easy, the means simple and obvious. *We must educate ourselves, as farmers and mechanics*, to the mastery of all that is good, that is useful, in befitting for life—"high life" as well as "low life." Would we set up and bow down to any subordinate shrine, let it be that of LABOR. Glorious, world-subduing, man-developing Labor! Not of the hands alone, but of the hands, the heart, the head, equally and alike. And then we have only *to be consistent*, and press forward—to mark such as are our real friends *and sustain them*—in church and state, public and private; in matters social, pecuniary, or political—by all proper means, in word and deed, but *most of all at the ballot-box*—and the victory is accomplished: that victory wherein all are equally interested—the victory of Liberty, Equality, Fraternity.

Shall we not then have our National Bureau of Agriculture, State Industrial Universities, where the whole theory and practice of Agriculture and the Mechanic

Arts can be taught and studied; and not this alone, but ought not this same element of regular agricultural instruction, to be most profoundly incorporated into our Common School System? If a single reasonable objection can be urged to these propositions, the writer is not aware of it.

Speaking of soils generally, it is evident that the first thing to be considered in regard to them is their mechanical composition; whether too light or heavy, too wet or too dry; we then, by investigating the natural productions, or by cultivation, ascertain what crops they are adapted to, and what ones they are not. With these points ascertained, we are prepared to cultivate, alter, or improve understandingly. If too loose, we must add clay to stiffen it, or make use of barn manures, ashes, lime, or plaster, as shall prove best; but always striving, as we understand it, to procure good, compact grass-swards, or clover lays to work from; the great idea being to compact and enrich the surface soil. Stock are, therefore, most valuable aids in the management of sandy soils, both in pasturing and manuring. Manures, if used while fresh, should be ploughed-in in the fall; but for very sandy lands are best to be well rotted. But in a small way, as for gardens and the like, clay should by all means be employed—to be carted on in the fall, and exposed to the frosts of winter before ploughing in. Of course the utmost benefit will only be derived by perfectly mixing the sand and clay together—sufficient clay being used to bring the soil to a proper consistence. Mulching on such soils would, doubtless, be of the greatest service, especially in the case of fruit trees.

Heavy clay soils should be tempered by the addition of sand, the ploughing in of green crops, long manures, &c.; clover lays and grass swards, are of great utility in supplying lively vegetable matter. In planting trees on such soils, great care must be taken not to get them too deep, or in hollows, as the cold, clammy soil packs about the roots, strangling and starving them. In the case of some plants, it may be necessary in planting them on very heavy soils, to put in the bottom of the holes a thorough drainage of small stones, brick-bats, or the like, to relieve the roots from the surplus moisture. If there is any inclination to springiness, or stagnant moisture, the land must be thoroughly drained for fruit trees. On lands inclining to clay, especially with a gravelly subsoil near the surface—and there is not a little such in the West—we would again beg to recommend mulching; for which any kind of straw, or hay, or refuse litter, may be used. New manure, of course, makes the strongest.

In regard to the use of manure in the cultivation of trees, there are but few of our lands so rich as not to be benefitted by manure, whether planted to nurseries or orchards; and with much of our soil it is quite indispensable to success, with at least the apple. The pear, plum, quince, and common red cherry, are also greatly benefitted on most of our soils by a greater or less quantity, as the

growth, and our experience shall seem to dictate. Ashes are always excellent for fruit trees, and lime also in many cases. Salt, we are also inclined to think well of, for most kinds, but especially the plum and quince. It must be used cautiously —say one or two quarts each—*well spread* under good sized standard trees, and from five to six bushels per acre. Mulching promises to be the cheapest and most efficient manure we can use, and should be applied three or four inches in depth, covering the ground in nurseries, or among fruit-bushes and the like. Around standard trees it should extend as far as the roots, and not less than three feet each way from the stem.

As to the probable fruit-bearing character of the North-West.—It will, doubtless, be excellent for apples and common red cherries; and quite far North, though more care will doubtless be required there, while the trees are young. Pears, plums, and the Duke cherries, will probably do passably well—and perhaps well North—hardy kinds of the plum especially. As for peaches, heart cherries, and quinces, it is doubted if they will succeed as well any where in this region as at the East, though along the lake shore they do pretty well. In Southern Wisconsin we deem it, nevertheless, well worth while to plant the peach and quince. The sweet cherries cannot be recommended. The whole list of smaller fruits flourish generally through this section, and should be extensively cultivated.

As to the probable market for fruit—to us of the present generation, and probably to all time, it must be, practically, boundless—at least for long-keeping apples, dried and preserved fruits. Whichever way we look, we find new openings or markets for fruit. In addition to the increased and increasing use that is being made of it generally for domestic purposes and stock feeding—in addition to the pressing home demand existing among us—there are on the North and West, vast tracts of unsettled country that will naturally rely upon us to supply them. If we look South, there are the Southern States, the West Indies, Central America, and California, all rich, easy of access, and dependant, at least, for apples. If we look East, there are also high prices and good markets, at least in some seasons, so that we might sometimes be required to supp'y even them.

And furthermore we believe—and believing we may as well give it utterance—that according as we interpret the signs and necessities of the times, the bristly gory Star of Pork-dom will, ere long, culminate; that, henceforth, flesh-eating will decline and disappear before the rising unsanguined glory of the Sun of Appledom!—when Ceres, Pomona, and the Genius of Temperance, shall preside at our festal and domestic boards!

We will conclude this tedious article with lists of tender and hardy sorts of apples when grafted on the root.

Varieties, which though they may sometimes succeed when root grafted, have proved with us tender and untrusty on the root.—Baldwin, Eropus, Spitzenburg, Roxbury Russet, Hubbardston Nonsuch, Rambo, Bullock's Pippin (or American Golden Russet), Maiden's Blush, Jersey Sweet, R. I. Greening, Spice Sweet, Brabant Bellflower.

Varieties that are rather tender the first year or two, but afterwards pretty safe on the root.—Early Harvest, Golden Sweet, Fall Pippin, Vandervere, Pomme Gris, Drap D'Or, Winter Pearmain, Carthouse (or Red Romanite), Northern Spy.

Hardy sorts.—Red Astracan, Sops of Wine, Duchess of Oldenburg, Early Red, Harvest Red Streak, Carolina June, Fall Orange, Hoss Apple, Monstrous Pippin, St. Lawrence, Autumn Strawberry, Autumn Swaar, Bailey or Edgerly Sweet. Pound Sweet, Fall Wine, Yellow Bellflower, Flushing-Spitzenburg, Dornine, Pregor Red, Rawle's Jannet, English Golden Russet, Blue Pearmain, Perry Russet, Seek-no-further (Westfield), Talman Sweet, Wine-sap.

GARDENING.

Barnham Nursery Gardens, Dover, Dec. 20th, 1851.

Dear Sir—In answer to your communication, requesting me to furnish some ideas in relation to Gardening, for the use of the State Agricultural Society, I would first suggest to farmers the means of having a cheap living fence. Much have been said in various quarters about hedge-planting, but up to this time very little has been done in Wisconsin to establish a living fence capable of refusing admission to cattle, hogs, &c. The rail fence is fast decaying—the best of the timber has already been cut for rails, and thousands of acres of land in this State are yet in a state of nature, without any sort of fence. If enough of timber cannot be found to fence the land when the plough has done its duty, where will a second supply be obtained when the first has decayed? The farmer must then resort to some other protection for his crops, and now is the time to consider this question. If when the rails are first laid down a proper hedge is planted, and if, when planted, it is properly managed, the rails may be removed in five years, leaving behind a good living fence. The farmer can obtain this desirable protection without sending to Texas for the Osage Orange, or to England for the Hawthorn, both of which are too tender for the Wisconsin winters.

The Locust tree, when planted thick, will turn cattle, but grows too rapid to form underbrush sufficient to repel hogs. The articles I wish to recommend for

a hedge, are two varieties of the American Hawthorn, both of which can be found in abundance in most of our plum groves. The first (Cratagus primifolia) produces thorns averaging two and one half inches in length—the wood is of a dark brown color, the foliage large and glossy. The second kind (Cratagus pyrifolia) is the second in rank, out of twenty-two varieties, found indigenous in America—the foliage of this kind is much smaller than the former—the wood is of a whitish brown color, the seed small, and the thorns about one inch long. These two varieties are quite equal to the English Thorn for hedge purposes, and are perfectly hardy; the farmer should therefore lose no time in collecting as many plants as possible, both large and small, and planting them either in the spring or fall as a hedge. In order to make as much of what plants can be obtained as possible, the following method is recommended for planting: each plant should be firmly planted at an inclination sufficient to make an angle of twenty-five degrees, and should be well watered; a portion of the top should then be cut off with a knife in order to induce laterals, or side shoots, to grow out; as soon as the laterals are about one inch long, a trench should be formed, four inches deep, and the leaning plant pegged down. As soon as the laterals grow above the surface soil, they should be bent down and covered with soil, to the level of the surface. They will ultimately take root and form as good a hedge as any farmer can desire. Care must be taken in planting, so that the top of each plant will reach, when planted, the root of the next plant horizontally. The next and very important point to be considered is, the subsequent clipping or pruning of the hedge. It should invariably form, in appearance, a continuous row of sugar-loaves, broad at the base and tapering upwards. This work is best and most readily performed with a common reaping hook; with such an instrument one man can clip on both sides of the hedge a quarter of a mile per day, and do the work well. Seeds of both kinds of the Hawthorn here recommended should be gathered in October, and kept in damp sand in a cellar during winter. As soon as spring opens the seeds should be put in boiling water, and allowed to remain in the same for twenty-four hours before sowing, which should be done in drills three inches deep, and one foot space between each drill. In two years these plants will be large enough to plant out as above recommended. The Sweet Briar also offers itself as a candidate for an hedge plant. It can be made highly useful for hedge purposes, and can easily be obtained by gathering the seed in November, separating it from the pulp, and keeping it from too dry an atmosphere. To form a good hedge the Sweet Briar must be planted in double rows—a line should be stretched by which to plant the first row, and then a space of one foot left between each plant; the second row should be eighteen inches from the first, and the plants should be placed diagonally in the centre of the intervals between the plants of the first row. This hedge should be clipped, as is

recommended for the first kind, and it will be found impervious to hogs, horses, or oxen. It being of the Rose family, (*Rosa Rubiginosa,*) it can be made a very ornamental hedge plant. At regular distances, strong shoots may be allowed to grow in the centre of the hedge; these can be budded in July with any kind of Rose; care, however, must be taken to drive a stake into the ground through the centre of the hedge, sufficiently long to tie the budded branch to it, to keep it from being broken off, at the junction of the bud, by strong winds. It also makes an ornamental plant in the garden, by being pruned occasionally, in the summer, into a conical form.

With regard to roots, I would suggest a few ideas.—The Ruta Baga has, with the potatoe, suffered for the past few years, in Wisconsin, from some disease. The plant itself, in constitution, has not suffered, as is proved from various authentic reports, in districts throughout the world, where the potatoe-rot has been much felt. The experience of the State of Ohio, for the last year, affords a good example: there they have had, for several years, a very scanty crop; but the last year they raised enough not only to supply themselves, but also had a large surplus for exportation. The Mangel Wortzel is one of the best roots any farmer can grow, and it is equal, if not superior, to the Ruta Baga; its proper name being "Mammoth Beet." Any animal that will eat the one will gladly eat the other. Under good tillage the Mangel Wortzel will produce at least seven hundred bushels per acre. It should be sown in drills, three feet apart, and thinned out in the drill to nine inches, giving them this room for growth. They produce a large crop in the Wisconsin climate; I myself having grown them six inches in diameter, and thirty inches long. Tobacco should also occupy a place in the attention of the Wisconsin agriculturist. This plant will produce a fine, well matured crop for five years out of six with good management. The Virginian variety (*Nicotianum Virginicum,*) is the best, and should be sown in boxes, about the first of April, kept in the house at night and exposed to the sun in the day, or else raised in a hot-bed.

It is doubted whether the peach will succeed in Wisconsin; from my own observation, I find that the plants grown in, and brought from, the East or South, frequently winter-kill to the ground for five or six successive years; but when the seed is procured from fruit grown in this State, it is much more hardy. The gooseberry bears well, especially when salt is applied during the winter, or early in the spring; a handful is sufficient for each plant, and care must be taken that the salt does not come in contact with the branches. The pear promises to do well; some few varieties, among which were the Bartlett and the Jargonelle, suffered six or seven years ago from the severity of the winter; but since that time, out of a large number of varieties, none have been affected. The Fastolfe Raspberry is a fruit which every gardener should possess; it is hardy, very produc-

tive, and of an excellent flavor, if the true variety is obtained. The Asparagus (Grayson's Grant) as an early vegetable, has succeeded well in Barnham Gardens, it being ready for the table early in May; no garden should be without it. The Black Grape Currant succeeds well in Wisconsin, its fruit being large, and with a fine flavor. Many persons have planted, and others are intending to plant, vine-yards; thus far, those who have planted have met with very good success.

Much inconvenience has been felt in raising cabbage plants. The plan that I have adopted, is to erect a frame nine inches deep, and of any length or width to suit the grower; posts, with cross pieces, are placed to support the frame, which is filled with soil. The posts must be well tarred, and the Beetle fly will then never trouble the plants; they must be well watered. The strawberry should have a good place in every garden, as they are very prolific in Wisconsin. Several varieties should be grown together, of both the pistillate and staminate, and allowed to cover the surface with runners, to keep that moisture in the soil so essential to the maturation of this wholesome fruit. The apple and plum have proved themselves capable of producing a quantity and quality of fruit not surpassed by any State in the Union.

It is much to be regretted, that while there are so many villas erected and inhabited in Wisconsin, there should yet exist so much apathy upon the subject of ornamental gardening. The architect does much to vary and beautify the face of nature; but the Rose, the Lily, the Lilac, and a host of other beautiful and ornamental plants, are anxious candidates for a place in the garden of beauty.

A garden well designed, with the Rose in cluster, arrests the attention and admiration of all who live to love the wonderful works of nature. The ornamental flowers of America are not surpassed by those of any other country. The man of business has but little leisure to bestow upon these pleasing embellishments of life; and this is some excuse for his having so poor a garden. The ornamental part of the garden belongs properly to the management of a lady; and to her must the nursery-man look for favor in his profession. The shady bower, properly erected, and covered with a suitable climber, affords a most delightful retreat from the heat of the warm day sun, or in the cool breath of evening. The bower should have its entrance door towards the north—the design being according to the fancy or taste of the owner; but under no circumstances should the roof in the centre exceed six feet in height—and the lower the better, allowing sufficient room for persons to sit easily, since the lower it is, the more complete will be the covering from the different climbers. Any of the following plants are good climbers, and are well adapted for covering bowers: Jonicera Odorotissimo, Lonicera Frazerii, Baltimore Belle Rose, Chamois Royal Rose, Michigan Rose,

Boursoult Rose. The grape vine also assists materially in covering a bower. The Lonicera is a beautiful and ever-blooming honey-suckle, a good climber, and of great fragrance.

I am, dear Sir,

Very respectfully your obedient Servant,

JOHN HAND.

To Albert C. Ingham, Esq.
Sec. of the Wis. State Agr. Society.

KITCHEN GARDEN.

An esteemed friend, and correspondent of the Society, writes as follows upon this subject:

"I have been led to believe, that in the Western States, generally, the importance of a Kitchen Garden, as a means of real comfort to the farmer's family, is not fully appreciated; believing, as I do, that no small importance attaches to it, not only as a matter of comfort, but also of economy.

"I think every farmer should have, at least, one half of an acre of ground, near or adjacent to his house, that is well fenced, and kept for this purpose. This may be divided, by appropriating one portion of it to choice fruits—cherries, pears, apples, plums, and quinces. Another portion may be devoted to shrubbery, currants, raspberries, and gooseberries. And another portion to vegetables—early potatoes, sweet corn, peas, beans, onions, beets, cabbages, and asparagus, &c. Even as small a garden as one of half an acre, properly cultivated, and with a judicious selection of fruits and vegetables, such as the taste and experience of the farmer might dictate, would prove of great benefit, and add very materially to his comforts. The objection is frequently urged, that it consumes too much time, and draws off the attention from the other labors of the farm which are more necessary; but this reasoning I do not think good. The time that is spent in the procurement of the comforts of life, is not misspent nor lost; and the few hours devoted to the labor of making a garden, may be those that are now wasted, or worse than wasted."

AGRICULTURAL EDUCATION.

University, December 18th, 1851.

Dear Sir—Since the receipt of your note of the 10th ult., my attention has been engrossed with matters more nearly pertaining to the administration of the University, and to my official duties therein, than even that very interesting topic to which you call my attention, and which I hope to be able, at some future time, to consider more at large than I can now do.

The policy of connecting a Department of Applied Science with the University of Wisconsin, for the professional benefit of the young farmer and the artizan, was discussed by the Board of Regents, in their Third Annual Report. An extract from that Report, which I transmit to you herewith, contains the substance of the argument. The propriety of bringing the philosophy of the industrial occupations within the scope of the State University, is clearly and truthfully set forth in that portion of the Regent's Report.

Provided the policy therein indicated be adopted by the State, and incorporated into its system of public instruction, the two practical questions, which are raised, concern:—1. The proper organization of the proposed Department of the University; and—2. The amount of the endowment necessary to carry the plan into effect.

1. A school for professional instruction in Industrial Philosophy to be part and parcel of the University system, will require two Chairs at least; one of Chemistry, and its applications both to Agriculture and the Arts; the other of Mechanical Philosophy, with the like applications.

The instructions of the first Chair, in addition to elementary chemistry, will embrace the analysis of soils, and of organic substances, both animal and vegetable; the doctrine of specific manures; the theory of the nutrition of plants; the proper preparation of the soil for its service in production; and other topics of like practical interest.

The attachment of a Model Farm to the Department, would require a considerable outlay in the beginning; but, if well conducted, it ought to pay its annual expenses, and afford some support to the pupils.

It should be a part of the duty of the Professor, during his vacations, which might occupy five months of the year, to make geological examinations of different portions of the State, with a view not only to the general scientific value of his observations, but to their special bearings on the discovery and development of the agricultural capabilities of the soil. He should make full

report to the Board at each annual meeting, to be appended to the yearly report of the Board to the Legislature, and printed for general circulation and use.

The pupils should have the privilege of accompanying the Professor in his excursions, and sharing in his observations. The practical knowledge thus acquired would illustrate the instructions of the lecture room, and prove a valuable portion of the education of the future cultivators of the soil.

The recorded results of the annual observations thus made, when summed up and digested, would amount ultimately to an entire geological survey of the State, undertaken and accomplished, very appropriately, through the agency of the State University. The work would be done, it is true, gradually, but economically, with a just bearing on the educational and agricultural interests of the State.

During these annual excursions, much might be done to determine the topography of the State, and to enlarge the catalogue of its natural productions.

The instructions of the Chair of Mechanical Philosophy, in addition to Theoretic Mechanics, should embrace the doctrine of moving forces in all their variety; their different modes of application, and the history of invention. These instructions should be illustrated by models of machinery, exhibiting the combinations of the elementary mechanical powers known in the arts, and their practical working in the production of their several results.

The pupils in this Department, if not wholly occupied in their professional studies, should have access to the recitations and lectures of the other Chairs in the University: and to the library, cabinet, and other collections in natural science, on such terms and conditions as the Board of Regents may prescribe.

The Teachers' Class in the Normal Department of the University, should be admitted to the instructions of the Department of Applied Science, without charge.

2. The endowment necessary to carry into effect this entire plan, would consist: First, of an appropriation sufficient for the construction and fitting up of a laboratory and philosophical chamber, with suitable apparatus; and the purchase, improvement, and stocking of the model farm.—Second, of a sufficient annual sum to defray the current expenses of the two professorships.

The first of these items—the original outlay—could not safely be set down at less than $10,000; and the appropriation for the support of the Department—the second item—should not be less than $2,500 per annum.

Should it be thought expedient not to adopt the whole plan in the beginning, and to confine the enterprise for the present, to the foundation of an Agricultural Department strictly, with the single professorship of Chemistry, with special bearings of that and other natural sciences on Agriculture, an annual appropriation of $2,000 would enable the Regents of the University to provide and furnish the laboratory, and support the Department. The Model Farm, although an important appendage to the school, would not, of necessity, be large or expensive.

There are two collateral interests attached to this measure, which I deem very important.

In the first place, it will enable the pupils in the Normal Department of the University, to carry the elements of agricultural science into the district schools and township academies, rendering our whole educational system more directly and efficiently subsidiary to the industrial interests of the State, than it could otherwise be.

In the second place, it will secure, without a burdensome public expenditure, a geological survey of the State, as rapidly as the settlement of the vacant lands, and the interests of agriculture will require.

The extension of the University system to Normal and Agricultural instruction, involves this important advantage, that the pupils of these Departments will be able to avail themselves, during their period of professional study, of the instructions of the other Departments of the University.

In conclusion, allow me to say, that I regard this as an *Agricultural* rather than a strictly educational measure. It is for the industrial interests to decide, what service they will require, and enable the University to perform, for their benefit The University, therefore, waits the action of the Agricultural Society in this behalf, with the tender of its hearty co-operation in their efforts for the diffusion of agricultural science, and the general elevation of the industrial interests of the State.

I have the honor to be,

Very respectfully, your obedient Servant,

JOHN H. LATHROP.

To Albert C. Ingham, Esq.

Sc. of the Wis. State Agr. Society.

EXTRACT FROM THE THIRD ANNUAL REPORT OF THE BOARD OF REGENTS OF THE UNIVERSITY OF WISCONSIN.

"The Board have an additional reason for looking beyond the present endowment of the University. The applications of science to the useful arts, including every industrial occupation which ministers to the well-being of society, have become too numerous and too important to be neglected, in any wisely constructed system of public instruction.

"It needs no argument to satisfy the most casual observer, that the position which nations and communities are destined to take in the scale of modern civilization, must depend, in a very great degree on the extent to which science guides the hand of production, and regulates the processes of trade.

"Science multiplies the productiveness of labor in all the mechanical arts; it cheapens the cost of construction, and the service of all classes of commercial agency; it imparts a vivifying energy to the agricultural elements, enlarging its yield, and adapting its varied results to the demands of an advancing civilization—transmuting the sweat of the husbandman's brow, not into that bread alone which goes to the sustentation of the animal nature, but into aliment for the growth of his intellectual, moral, and social being.

"It is manifest, therefore, that a State University cannot now be regarded as entire in its plan and design, without the organization of a Department of the 'Practical Applications of Science.'

"The Chairs of Instruction in such Department, should be sufficiently numerous, and the scope of each sufficiently extensive to cover the whole ground of the philosophy of the useful arts; and to afford ample opportunity to the young men of the State, whether graduates of the other Departments or not, to prepare themselves, in the best manner, for the intelligent prosecution of their several industrial avocations, and for the skilful administration, each in his sphere, of the productive agencies, which science is offering, in improved forms, to the well-directed enterprise which distinguishes modern civilization.

"In the establishment of this Department of Applied Science, none of the industrial processes are more interested than that of Agriculture. It is impossible that the annual yield of land and labor, should not be greatly increased in quantity and improved in quality, by the universal diffusion among cultvators, of a knowledge of the analysis of soils—of the action of manures—of he elements which enter into the composition of grasses, grains, and other agricultural products severally—of the natural history of plants and animals, and the relations of light, heat, moisture, gravitation, electricity and its cognate agents, to he processes of organic life.

"The same reasons then that have hitherto gathered Schools of Law, Medicine and Theology, around the Literary Department in the University system, and are now attracting to its appropriate place in the same system, the School of Normal Instruction—the same reasons would bring the Agricultural School, in like manner, within the scope of University instruction, and offer to the professional student in this Art a like liberal culture, to that which has been deemed, heretofore, the appropriate, if not the exclusive, preparation of the candidatefor the learned professions.

"When the great truth shall pass into an abiding conviction, of the popular mind, that Agriculture and the Useful Arts have their appropriate science, which is to be reached through philosophical and professional culture, the causes which have served to depress the industrial occupations will disappear; the social position of the individual will cease to be determined by his art or calling, but will

be fixed by his intellectual and moral worth, and the pride of profession will be lost in the dignity of the man.

"It is with a view, then, not merely to multiply the valuable products of the various forms of industrial agency, but to level them up to the standard of professional dignity and consideration, that the idea of Agricultural Colleges, and Schools for instruction in the philosophy of the Useful Arts, has recently found audience and favor with the friends of educational reform and social progress, in Europe and America.

"The Board look upon this important movement of modern civilization, as a distinct demand for the enlargement of the existing University system, by adding to its organization a Department for professional instruction in Agriculture and the Useful Arts. For valuable as separate and isolated Agricultural Colleges may be conceded to be, the expenditure which would be needed to found and sustain them, would not fail, if applied to the organization and support of a University Department of like purposes and ends, to accomplish far more for the indvidual, and for society.

"By introducing the future cultivator or the artizan, during the period of his professional culture, to the more liberal instructions of the University, we secure to him, in the highest degree, the advantages of chemical and mechanical science—of the experimental farm—of models illustrative of the industrial processes—and, superadd to all these, access to the library, and collections in the various branches of Natural Science; and, in connexion with the regular classes, to the lecture rooms of the Professors of the other Departments, whether collegiate or professional.

"That it is the tendency of modern civilization, to open the advantages of liberal culture to every class of human agents in the organization of society, and thus to secure to itself the enlarged physical wealth, and the higher intellectual, moral, and social good involved in this condition, is a truth which addresses itself to every observing mind.

"It is in the earnest conviction of this truth, and in the cordial desire that Wisconsin may, at an early day, take a leading position in this movement, that the Board have undertaken to demonstrate the proper relation of the University to those great industrial agencies, which have hitherto been regarded almost, if not altogether, without the scope of its beneficent action, and its elevating influences—and have ventured to suggest the hope, that its resources may be so enlarged by the public bounty, as to enable it to cover the whole ground to which it is entitled; to do the entire work which it can best do, and which may be justly assigned to it, and required of it in the economy of modern civilization."

AGRICULTURE OF NORTHERN ILLINOIS.

THE GROVE, NORTHFIELD, COOK CO., ILLINOIS,
December 25th, 1851.

DEAR SIR—Your favor of recent date has been received, and I would gladly comply with your very flattering request, did I, at this moment, feel able to do anything like justice to either of the interesting subjects so kindly suggested.

But the time allowed is very short; and I have been suffering from an affection of the eyes which still prevents reading, and renders writing somewhat difficult and painful. And, you are doubtless aware, that one, who does not write for the press habitually, as a business, can seldom, if ever, produce a good article "upon compulsion." And yet, should this reply to your kind letter chance to grow into an ESSAY under my ever-willing pen, you will be at liberty to use it, should you find grains of wheat enough mixed with my wordy chaff, to make the whole worth preservation.

You suggest, as one subject upon which you wish me to write, "THE AGRICULTURAL CONDITION OF NORTHERN ILLINOIS." Now, Sir, there are so many new and favorable elements affecting us just at the present moment, that it is not easy to give any thing like a clear idea of the agricultural condition of this region, without a more lengthened history of cause and effect, than I am able to put into readable form in a single day.

I think I may safely assert, however, that husbandry, in Northern Illinois, is now in a state of active transition, from the old hundred-acre wheat fields, to moderate stock and dairy farms, and a variety of products for market instead of the *one*, which seventeen years experience has shown to be the most uncertain, and—except occasionally (and *then* from accidental causes)—the least profitable of all standard crops in Northern Illinois.

Say what we may, with our present mode of cultivation, this is not a wheat country—though I am by no means prepared to say, that it may not be made one in the next generation; but it is hardly probable that we shall ever be able to compete with the southern part of our own State—much less such wheat States as Michigan and Ohio—in a Southern or Eastern market. Not, at least, with our present knowledge of soils and cultivation. Meteorological influences, facilities for transportation, and other causes, affecting the wheat crop in Northern Illinois, and, I may well add, Southern Wisconsin.

Our soil is mostly a peculiar PRAIRIE FORMATION, differing materially in sensible properties, and considerably in chemical composition from any good "wheat

land" with which I have been familiar. Our surface soil, within the ordinary depth of our prairie ploughs, is an intensely black, carbonated, semi-peaty, spongy mixture of sand and organized matter, with *less than three per cent* of ALUMINA, or the pure element of clay—which I need not tell you is an essential ingredient in a wheat soil, especially in a climate and exposure like ours, and with a subsoil that holds water nearly as well as an earthen cistern.

Our prairies are as naked in winter as the deserts of Arabia, so far as efficient protection to the wheat plant is concerned; and in December, or before the middle of January, we are pretty sure of a dry west wind, bringing from 40 to 50 degrees of frost; and if this does not kill the wheat outright, we have—at least three years in four—the most sudden and extreme alternations of temperature. And, towards spring, the ground is almost always saturated with water, and the repeated freezing and thawing process, on such a soil, so full of water, is sure to draw out every wheat plant not accidentally protected.

Now, here is the failure of our wheat crop sufficiently accounted for; and I will but glance at some of the more obvious means of preventing these causes from operating to so disastrous an extent, should we determine not to abandon wheat growing entirely.

The first preventive is THOROUGH DRAINAGE; the second TRENCH PLOUGHING—one plough behind another, in the same furrow—by which a portion of the CLAY subsoil is mixed with the surface, altering its texture, and rendering it capable of retaining the roots of plants, aided by the deep culture, and efficient drainage, in which the ordinary subsoil plough might act its part, where there should chance to be clay enough at the surface. The third requisite is DRILL PLANTING; the fourth and last, ARTIFICIAL PROTECTION. This may be effected in various ways—by spreading straw, &c., on the surface, if not too difficult and extensive; but principally by dense living fences. Hedges of Osage Orange, or other more hardy plants, and large orchards and young timber plantations—converting the bleak and naked prairie farms into mild and sheltered woodland homes. In short, making, or at least modifying, a climate as well as a soil to suit the object in view.

And all this preparation will be worth just as much for other crops, and for all farm products; and, in fact, I am not certain that we can ever make wheat pay here as well as nearly every other product for which we have a more certain market. There can be but one hope in the future for the Northern Illinois wheat-grower—the hope that he may have to feed all the manufacturers necessary to produce the fabrics he consumes—and be enabled to exchange food for clothing, implements, &c., at his own door.

But, even here, the man who produces the raw material used in manufactures, will have the advantage of the grain grower—for if he can make money now,

when his products have to be shipped East, he will make more when he and the manufacturer escape the charges and profits of merchants, on the two transportations for all the domestic goods needed in the West.

Any thing like a steady or reliable Foreign demand for our surplus grain, at rates that will pay the producer, is now admitted to be a practical illusion. And, I must confess, that it always appeared to me bad management, for farmers at least, to purchase ten dollars' worth of goods, and pay only eight in the products of our farms; it appears to me, that as a matter of "exchange," this also is an illusory speculation, and one that reflects very little credit upon the shrewdness of the "calculating Yankee nation;" though I question not, that our merchants find their account all right in the matter nevertheless.

But I am only a home-bred farmer, writing for farmers; and I cannot be considered as much of a political economist, or logician either; and yet, as this subject comes home to the farmer in more ways than one, I should not be justified in leaving it untouched, when I feel assured that the statements of politicians, as to the prospects of a foreign demand for bread stuffs, have had much to do with the present condition of agriculture in Northern Illinois.

Yet there are other reasons why we have sown wheat—and one of them a potent reason—few of us have known what else to do. Many who have seen the losing game of wheat culture have been unable to purchase stock; and, since the fencing of the prairies, in many places, have feared that there would not be a range for herds and flocks.

This is all very natural under the circumstances, and yet is the effect of ignorance—mere empirics—we know nothing of farming as a science. If all these farmers in Northern Illinois who have sown wheat for the last five years, because they did not know what else to do, had been educated for their profession, they would have had stock enough to-day; and would find plenty of room on their farms for the animals best suited to them; or to their own tastes in the matter of stock-growing and its concomitants.

Horses and mules for a Southern market; butter, cheese, beef, pork and wool, for East and South; and even a foreign market for some—are all more certainly remunerating, and more easily produced than wheat. But we must know how to do it right, or we shall not fully succeed in any one thing undertaken, and certainly not in several conjoined, which is the only safe way for us to make money.

Farmers lack science—they need a practical agricultural education as much as doctors of medicine the aid of colleges and hospitals—and without a specific education (and how many have it?) the farmer is just as much of a *quack*, as the man who practises medicine because he is a "seventh son," or has learned,

from tradition, to cure one disease, and even then, does not know that NATURE, aided perhaps by HOPE, has done the work for him.

In Great Britain there is some agricultural science, and this enables Scotch and English farmers to sustain themselves—with "free trade"—in grain; and pay annual rent and taxes equal to the value of an "improved farm" of like size in Northern Illinois. Some will tell you that it is cheap labor, that enables the farmers of Europe to pay the landlords such enormous rents—and all the "poor rates," "church rates," and other legal dues besides. And, of course, cheap labor does its part; for it can be wielded exactly like our slave labor in the South; but, at best, it does no more than help to put the worn out, natural soil of England, on a par with our virgin prairies, if it does so much.

I have not the figures before me for showing this, as compared with Northern Illinois; but I will give you the first case I turn to, in the Transactions of the New York State Agricultural Society. Here it is:

Mr. D. D. T. More, purchased a farm near Albany, New York, some six or seven years ago, and received the second premium of the Society for 1850. This farm, of 185 acres, of the worn-out semi-barrens of that region, had been rented at $100 per year, for a long time previous to its purchase by Mr. More; and it did not pay for cultivating, even at that low rent—the whole annual product not exceeding the value of some $400 or $500.

Well, the present owner—a SCIENTIFIC FARMER—has raised the product of one year to $4,852 51; leaving him a clear profit of $2,678 16 per annum, after supporting a family of seven, who added nothing to the result by their hand labor.

Here, you have a ten-fold increase of the value of the products, and almost twenty-seven times the previous rent paid for this very land; and all made by the "head work" of one man—for Mr. More is too feeble in health to labor with his own hands. And then, besides laying by this large sum, in one year, Mr. M. has had his own, and family support, in lieu of salary as superintendent. Now, do not say a word about "cheap labor in England, when SCIENCE can do so much in our own land.

But I will tell you what you may do, and should do—create an hundred such farmers as Mr. More in Wisconsin every year—and rest assured, that the example of one such man will be worth more to the neighborhood in which he may live, than the cost of educating one hundred.

You of Wisconsin have taken the first and second steps in agricultural advancement, why not take THE THIRD, and most important stride, at once? and secure, at least, one Agricultural College, and Experimental Farm, in your State. Now, while land is cheap, and your "Seminary Fund" not all given to perpetuate aristocratic "caste" in a republican land, and promote the extension of

barren learning, in an age that boasts of progress, and among a people where the utility and the equality of education—at least of that education which is, in part, a gift of the Nation and the State—should be the first principles settled in all legislation.

If the funds provided by the general Government should prove insufficient to pay professors in all the colleges at which a practical education is given to the sons of practical men, then let the State supply the deficiency, and provide all the necessary lands, buildings, stock, apparatus, &c., &c.; and require the pupil in your agricultural schools, to pay his own board, at least by his own daily labor on the farm, or in the farm yard, or work shops.

Six or eight hours daily labor in summer, and half as much in winter, will not be found much more than the health of farmers' sons will require, at school; and certainly not more than will be necessary to give them the practical lessons which they should receive, along with the regular course of scientific instruction; and half as much labor, properly directed, will support the young farmer at a well endowed Institution.

I am aware that I have suggested a giant stride; and yet "the young giant of the West" is fully equal to such steps—and from some of her acts, we may conclude that the "Badger State" is as apt as any, in the great West, to strike out a track for herself, instead of following the beaten path of time-honored error, or the crooked one of old time, and present time, political and educational wiseacres—who, with all their learning, and all their pretensions to democratic progress, are, in reality, a half century behind the wants and the wishes of the age in which we live.

Now, Sir, I have given you the rapid thoughts of a day, sketched without forethought, as without method; and in such chirography as may not be easily deciphered.

With the warmest feelings and hopes for the success of your young State Society, and the cause of agricultural advancement, and practical education in the West, and throughout the Union,

I am, dear Sir,

Hastily, but cordially, yours,

JOHN A. KENNICOTT.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

CLIMATE OF WISCONSIN.

The following TABLES OF METEOROLOGICAL OBSERVATIONS will exhibit, in some degree, the peculiarities of the Climate of this State. It is not proposed to write an Essay on this important subject, based upon these Tables—indeed the short time since they were made does not admit of it; nor is one year by any means sufficient for this purpose. Such observations should be extended over the whole State, so as to cover every variety of local circumstances, and be continued sufficiently long to cover every possible change of season. Each reader is requested to compare these Tables, one with another, and the whole with similar Tables made in other localities. By such comparison many very important and interesting facts will be deduced.

The Society invites all who are engaged in these pursuits to contribute the results annually for publication, believing that they will thus, in a few years, accumulate a mass of information from which all that is desirable in regard to our climate may be obtained, and made the basis of a future Essay on the subject.

METEOROLOGICAL OBSERVATIONS FOR THE YEAR 1851,

Made at MILWAUKEE, WISCONSIN. Latitude 43° 03′ 45″ N. Longitude 87° 57′ W. Elevation of the Cistern of the Barometer above Lake Michigan, 15 feet; above the Atlantic Ocean, 593 feet. By I. A. LAPHAM.

	January.	February.	March.	April.	May.	June.	July.	August.	Septemb.	October.	Novemb.	Decemb.	Year.
BAROMETER (inches)													
At Sun rise	29.38	29.47	29.42	29.41	29.42	29.37	29.42	29.52	29.60	29.38	29.42	29.45	29.44
9 A. M.	29.39	29.47	29.43	29.42	29.43	29.39	29.44	29.54	29.62	29.39	29.44	29.45	29.45
3 P. M.	29.36	29.45	29.40	29.39	29.42	29.38	29.42	29.52	29.58	29.35	29.41	29.44	29.43
9 P. M.	29.38	29.46	29.43	29.40	29.41	29.38	29.42	29.51	29.60	29.36	29.45	29.48	29.44
Maximum	30.00	29.95	29.71	30.05	29.88	29.70	29.62	29.78	29.98	29.79	30.10	29.94	30.10
Minimum	28.72	28.97	29.08	28.89	29.03	28.98	29.25	29.30	29.10	28.87	28.87	28.55	28.55
Mean	29.38	29.46	29.42	29.40	29.42	29.38	29.43	29.52	29.60	29.37	29.43	29.46	29.44
TEMP. OF BAROMET.													
At Sun rise	47.48	48.96	51.39	54.73	61.45	69.17	73.61	71.26	66.90	55.26	42.77	31.97	56.25
9 A.M.	46.84	49.11	52.16	56.20	62.71	70.00	73.97	72.45	67.03	54.87	42.80	31.90	56.67
3 P. M.	46.52	51.04	53.13	57.27	64.26	71.10	75.81	73.32	69.90	57.68	45.33	35.71	58.42
9 P. M.	50.93	53.47	56.84	58.93	68.87	71.47	75.49	73.64	69.77	58.07	45.90	36.97	60.03
Mean	47.94	50.65	53.38	56.78	64.32	70.44	74.72	72.67	68.40	56.47	44.20	34.14	57.84
TEMPERAT. OF AIR.													
At Sun rise	24.06	28.25	33.94	38.97	47.32	57.47	63.65	62.00	60.43	43.77	32.30	19.35	42.62
9 A.M.	27.16	31.14	41.87	46.70	54.90	67.37	71.67	70.71	67.43	50.51	34.27	20.54	48.69
3 P. M.	31.19	34.25	43.94	46.93	55.55	67.23	73.22	71.00	70.20	55.29	37.37	25.52	50.97
9 P. M.	26.61	31.39	37.74	41.97	50.81	60.73	65.54	65.32	64.03	48.45	33.87	22.48	45.75
Mean	27.25	31.26	39.38	43.64	52.15	63.20	69.02	67.36	65.52	49.51	34.35	21.98	47.05
Maximum	50	46	73	71	74	86	91	85	88	70	57	55	91
Minimum	—11	8	12	29	30	48	51	52	39	25	22	—9	—9
CLEARNESS OF SKY.*													
At Sun rise	351	275	539	580	416	727	584	694	570	510	403	403	494
9 A.M.	429	321	584	653	548	777	549	668	487	517	347	435	519
3 P.M.	397	375	555	483	561	657	658	613	563	539	267	335	502
9 P. M.	445	378	697	560	528	447	613	755	657	564	317	368	527
Mean	405	337	594	546	514	654	570	682	569	532	333	390	510
WIND,													
From the North	6	3	4	16	16	18	4	7	11	6	3	2	96
" South	1	9	5	1	4	10	6	7	10	18	4	2	77
" East	1	3	9	10	10	7	4	12	3	9	3	2	73
" West	27	22	13	17	13	14	23	14	7	11	23	24	208
" N. E.	17	16	29	28	44	16	25	25	29	5	10	7	251
" S. E.	13	17	17	20	15	12	28	21	18	17	10	10	194
" N. W.	27	17	20	13	2	18	11	13	9	27	48	55	260
" S. W.	31	25	26	14	16	17	18	23	29	26	19	20	254
Calm	1	0	1	1	4	8	5	2	4	5	0	2	33
RAIN & MELTED SNOW Inches	0.89	2.51	0.37	1.47	6.85	4.43	3.37	3.15	2.92	1.32	2.08	1.04	30.40

* Entire clearness, being 1,000.

ABSTRACT OF A METEOROLOGICAL JOURNAL

Kept at Beloit College, Beloit, Wisconsin, for the Year 1851. Latitude 42° 30′ 23″ N. Longitude 12° 03′ 20″ W. from Washington. Elevation above Lake Michigan, 172 feet; above the Ocean, 750 feet. By S. Pearl Lathrop, M. D. Professor of Chemistry and Natural History.

Month.	Barometer.			Thermometer.			Clearness of Sky.	Prevailing Winds.	Inch. Rain & Melted Snow.
	Max.	Min.	Mean.	Max.	Min.	Mean.			
January	29.89	28.68	28.70	56	−19	24.72	5.04	N.W. & S.	2.16
February	29.83	28.95	29.37	55	0	33.57	5.20	S. & N.	3.43
March	29.58	29.10	29.29	76	8	39.00	6.95	S. & N.	.55
April	29.85	28.85	29.28	76	24	43.80	6.37	N.W. & N.	2.35
May	29.61	28.85	29.32	84	23	57.30	5.50	S.E. & N.W.	15.46
June	29.50	28.90	29.34	88	41	62.40	5.85	N.W. & S.W.	5.52
July	29.43	29.09	29.26	95	46	71.84	6.48	S.W. & N.W.	5.52
August	29.49	29.09	29.32	98	50	68.68	5.50	S.E. & S.	9.85
September	29.68	29.01	29.40	94	32	66.90	6.82	S.W. & S.E.	3.40
October	29.56	28.71	29.14	76	20	49.61	6.12	S. & N.	3.40
November	29.82	28.74	29.26	48	16	34.83	4.85	N. & N.W.	1.63
December	29.74	28.55	29.39	56	−12	22.10	4.56	N.W. & S.W.	2.63
Year	29.665	28.543	29.339	98	−19	47.895	5.77	N.W. & N.	55.90
Year 1850	.....	.....	29.27	92	−7	47.20	—	N.W. & N.	51.24

The mean temperature of the past year is 47°.895, being a little above that of the year 1850, which was 47°.200.

The mean temperature of the winter months of 1850–51, is 27°.43; of the spring months of this year, 46°.70—being 3°.62 higher than the temperature of the same months in the year 1850. The temperature of the summer months is 67°.64—being 3°.86 lower than the temperature of the same months in the year 1850. The temperature of the autumnal months is 50°.45—being .88 of a degree above the temperature of the same months of the previous year.

The average density of the atmosphere, as indicated by the barometer, 29.339 inches—is a trifle greater than in the year 1850, it being for that year 29.27 inches, when corrected, by adding the decimal .64; which by comparison with one of Green's barometers—the kind now used, and recommended by the Smithsonian Institute—is found to be the true amount of correction necessary for the barometer then in use.

The observations have been made as last year, at the hours required by the Smithsonian Institute, viz.: Sunrise, 9 A. M., 3 P. M., and 9 P. M.

The amount of rain and melted snow for the year is 55.90 inches; being 4.66 inches more than in the year 1850, though the amount for that year was more than is thought to be the annual average. This amount, as will be seen by the table above, was not very equally distributed through the year—being for the month of May, 15.46 inches; and for the month of August, 9.85 inches; while for the month of March, it was only .55 of an inch; and for the month of November, 1.63 inches.

The rains in the month of May occurring mostly in the latter part of the month; amounting on the last day of the month to 4.5 inches, raised the Rock River to a great height, causing a flood which did great damage, carrying off animals, bridges, and dams.

The amount of snow which fell in the winter of 1850–51, was greater than in the winter previous, being about 15 inches; but was so equally distributed through the winter, as to afford but little sleighing.

The past year is considered usually productive, though some of the crops were greatly injured. The spring was very backward, more so even than the year before, though the temperature was a little higher. The heavy rains of May greatly delayed the planting of corn, on which account it was at first feared that there would be but a small crop; but the mild fall, and the delay of hard frost, gave time for the corn to ripen, and become a good crop.

The yield of grass was very heavy. The wheat was comparatively a failure; much of the spring wheat, especially the hedge-row, being greatly injured by the *blight.* Hundreds of acres were not harvested. The winter wheat, and some kinds of spring wheat, however, did usually well, furnishing a great abundance beyond what is necessarily consumed. The crop of oats was very heavy. The potatoe was very light, not being injured so much by the *rot* as by the blight; a kind of indefinite term, by-the-by, given to some cause which seems to elude the search of the agriculturist. Some portions of the State, it is understood, being almost destitute of this important vegetable.

Some farmers in this region have commenced the raising of flax, which gives a profitable yield, and is destined to be a crop of much importance, both on account of the seed and stalk.

The fact can but be fully impressed upon the mind of every observant person, that most, if not all, of the difficulties which attend the labors of the husbandman in our State would be entirely removed, were a better, a more thorough and faithful system of culture introduced.

No farmer in New England, or even in the fruitful State of New York, would have the temerity to expect a crop from so lax a system of culture. The con-

science of a New England farmer, practising upon such a system, would harrass him with a certain looking for of rust, mildew, and blight. In a country where a farmer will remove the place of his barn-yard, in order to get away as easily as possible from the accumulated manure; or, when this cannot be done, will cast it out into the street, or some gully, where the water shall wash it away as far as possible from his domain, nothing else other than a failure of crops ought to be expected.

What fruit has been introduced into the country did well the past year, and has kept up its good promise for the future. In some instances apple, as well as other fruit trees, have suffered from the blight; some grapes were injured by the frost while in the blossom, but those later in flowering did finely.

Garden vines were greatly injured by the heavy rains in the spring; some being entirely drowned out, while others rotted at the roots.

There was no flowering of plants the second time, observed, as last year, aside from the case mentioned in the Calendar, on December 10th.

The Cantharis Cinerea, which has made its appearance here in increasing numbers for the few previous years, was not observed to any amount. Neither was anything heard of the Chinck-bug, so troublesome the last two years in the northern counties of Illinois.

There have been, during the past year, some heavy storms of electric fluid, particularly in the month of May, frequently striking buildings and other objects elevated to much extent above the ground; thus showing the great importance of protecting buildings, greatly exposed as they are on the prairies, by proper lightning rods.

The prevailing winds have been as last year—north-west and north; though we have quite frequent and strong winds from the south-west.

There was a violent wind on the 30th of May, which did some damage by unroofing buildings, removing fences, &c., though its track, as it passed this place, was quite narrow, being but a few rods in width. Its general course was from south-west to the north-east. The law of rotation of the winds—from the north to the east; then south, south-west, west, &c., mentioned in the last year's abstract—seems to be the one generally followed, though not always, as far as capable of observation.

CALENDAR.

January 2d, Morning, meteor in the N. E.—16th, the Thermometer fell from 35° at sunrise, to 3° at 9 P. M. Tulips and Narcissus above ground; Humble Bee seen flying about.—30th, Coldest day in the year, Thermometer averaging 11° below zero.

February 23rd, Severe storms of thunder and lightning, with rain, in the night.

March 7th, Ranunculus Fascicularis in flower; Peony Humilis, Star of Bethlehem and Jonquils up.—16th, Blue Bird seen, Robins heard to sing; some say they remain here all winter near houses; Hood Anemone, Pasque Flower in blossom.—24th, Meadow Lark seen.—27th, Wild Pigeon seen; Missouri Currant in leaf.—29th, Bee Larkspur in leaf.

April, Frogs singing.—4th, Snow storm.—8th, Farmers sowing wheat.—12th, Spring Beauty in flower.—16th, Dwarf Iris, Dutchman's Breeches, Blood and Pepper Wort in flower.—18th, Wild Geese flying north; Strawberry in blossom; Jonquils in flower.—24th, Asparagus fit to eat; Lanced-leaved and Hood-leaved Violet, Perewinkle, Filbert, and Hyacinth in flower.—25th, Cherry in leaf, Currant in flower.—26th, Missouri Currant, Plum, Cherry, and Pear in flower. 28th, Gooseberry in flower.

May 3rd, Louse Wort in flower.—6th, Box Elder in blossom.—7th, Frogs singing for the second time, having begun *too soon* before.—8th, Ground Ivy, Flowering Almond in blossom.—9th, Blue Bell Puccoon in flower.—10th, Peach, Tulip, Painted Cup in flower; Baltimore Oriole seen.—12th, American Cowslip and Apple in flower; Burr and Black Oak in leaf—these trees did not blossom this year.—13th, Horse Chesnut in leaf.—14th, Solomon's Seal and Bladder-nut in flower.—15th, Tartarian Fly Honey Suckle in blossom; Locusts began to leaf out.—16th, Crane's Bill, Lilac and Daily in flower.—17th, Blue-eyed grass in blossom.—19th, White Moccasin flower, and Dwarf Peony in blossom.—20th, Wild Columbine, Wild Lupine, and White Oak in blossom.—23d, Milk Weed in flower.—24th, Virginian Anemone, and Snow Ball in blossom.—25th, Canadian Five-finger in flower.—26th, Rose Acacia in flower; Catalpa, and Hercules' Club in leaf.—27th, Fringe Plant, Monk's Hood, and Yellow Moccasin Flower in blossom; Fire Fly and Humming-Bird Moth seen.—28th, Seneca Snake Root, and Golden Alexanders in flower.—30th, Fever-Wort.

June 3d, Sweet Scented Syringa, Spiderwort in flower.—24th, Spotted Lilly in flower.

July 15th, One of the two hottest days of the year; thermometer averaging $83\frac{3}{4}°$.—16th, Catalpa in blossom.—20th, Bignonia Rodicons in flower.—26th, The other hottest day; the Thermometer averaging the same as on the 15th.

August 27th, Some report frosts.

September 10th, Splendid Aurora.—28th, Heavy Frost.

October 23rd, Water froze; Ice formed one inch and a half thick.

November 4th, First Snow.—10th, Flos Adonis (an annual) in full bloom.

December 15th, Thermometer at 19° below zero at $5\frac{3}{4}$ A. M.

ABSTRACT OF A METEOROLOGICAL JOURNAL

Kept at Beloit College, Beloit, Wisconsin, for the Year 1850. Latitude 42° 30'. Longitude 12° W. of Washington. Elevation above Lake Michigan, 172 feet; above the Ocean, 750 feet. By S. Pearl Lathrop, M. D. Professor of Chemistry and Natural History.

MONTH.	BAROMETER.			THERMOMETER.			Prevailing Winds.	Inch. Rain & Melted Snow.
	MAX.	MIN.	MEAN.	MAX.	MIN.	MEAN.		
January	28.98	27.90	28.55	46	-3	25.33	S. & N.W.	2.59
February	29.10	27.87	28.65	60	-7	27.50	N. & N.W.	.50
March	28.99	28.09	28.58	59	8	31.50	N. & S.	2.82
April	29.00	28.03	28.61	78	18	40.50	N. & N.E.	2.81
May	28.98	28.27	28.64	87	25	54.25	N. & S.	1.10
June	28.94	28.45	28.70	90	36	69.50	S. & S.W.	7.42
July	28.77	28.38	28.61	92	58	74.10	S. & N.W.	7.15
August	28.83	28.38	28.62	92	51	71.00	S. & S.E.	15.73
September	28.92	28.41	28.64	84	38	59.72	N. & S.	2.58
October	28.95	28.32	28.63	75	19	49.50	S. & N.W.	3.30
November	29.12	28.20	28.66	68	12	39.50	S. & N.W.	3.30
December	29.09	28.28	28.69	45	-4	24.00	N. & N.W.	1.94
Mean	.....	.....	28.63	.....	.....	47.20	.....	51.24

This being the first series of observations made at this place, no accurate comparisons, of course, can be made in any respect with previous years. The past year, however, is regarded by those who have longest resided here, as one of usual temperature through the summer months, and somewhat warmer than common through the autumnal months and December. The temperature of the spring months, however, is thought to have been lower than it is generally.

The mean temperature of the spring months is 42°.08; of the summer months, 71°.50; and of the autumnal months, 49°.57.

The mean temperature for the year 1850 is 47°.20; which is very nearly the temperature of the wells of the houses on the bluff upon which the College is situated.

The density of the atmosphere, as indicated by the barometer, is thought to be too low. This instrument, (as were all the instruments used in making these observations,) was made by Mr. N. B. Chamberlain, Boston, but was somewhat

injured in the transporting. It is estimated, from some comparisons which have been made, that its range is about .50 inch too low*.

It ought to be remarked, also, that the latitude and longitude, as well as the elevation of these observations, have not been definitely and strictly established by mathematical observations. They are regarded, however, as being not far from correct.

The observations have been made at the hours required by the Smithsonian Institution, viz.: Sunrise, 9 A. M., 3 P.M., and 9 P. M.

The amount of rain and melted snow for the year is 51.24 inches, giving the large mean of 4·27 inches per month through the year. This amount is much greater than was to be anticipated, from the great number of fair days, and the small amount of falling weather, which is very noticeable by one accustomed to the clouds and mists of the Green Mountains. The remark concerning the West, so frequently heard at the East, that "it rains here only at night and on Sundays," has been rather wonderfully established during the past year, as a large portion of the rain has fallen in the night!

Another fact observed is, that frequently the circumstances, which in Vermont are almost invariably accompanied by rain or falling weather of some kind, here pass away with only a storm of wind of greater or less force. This may be owing to the clouds being dissipated, and their moisture being absorbed by the great sweep of the winds over these extensive prairies. As two-thirds of the rain for the year fell in the three summer months, and one-third in one of these months, the remainder of the year may be regarded as having been rather dry.

The amount of snow which fell in the winter of 1849–50 was less than the usual quantity, being about four or five inches. There was some sleighing for three or four weeks. The quantity of snow, as appears from the observations of those longer resident here, varies greatly in different winters.

The year which has just past is considered as having been rather more productive than usual. Though the spring was uncommonly backward, yet the temperature was so uniform, that no portion of vegetation was unduly brought forward, and consequently injured by untimely frosts. Fruit, of the various kinds which have been introduced into this new country, did remarkably well, and gave fair promise of the *fruit-full* years to come. It appears to me that this cannot be otherwise than a very favorable country, both on account of soil and climate, for growing fruit of most kinds, such as apples, peaches, grapes, &c.,—

* I have since determined the amount of correction necessary, by comparing with one of Greene's standard barometers, and found it to be .64 of an inch, i. e., .64 is to be added to the numbers in the barometrical column of the preceding table.—Lathrop.

certainly so, if the last fall can be taken as a criterion of the character of future autumns.

The crops of grain, particularly of wheat and corn—the great staple productions of the southern portions of Wisconsin—are fully equal to those of any previous year. Thousands of bushels of the finest wheat, however, were lost by the great rains of July and August. A large amount of wheat cut down, but not garnered, was never removed from the fields. The farmers, from the great ease of getting seed into the ground, have become too much accustomed to sow more than they can command help to harvest and suitably secure. Another great error is their delaying to garner what is already suitably cured for that purpose, before whole fields are cut down by their *reapers*. The crop of potatoes was good, and scarcely at all injured by the "rot." The growth and ripening of all the species of Cucurbitaceæ was much favored by the constant warmth of the summer months, and, though the roots of the vines were somewhat injured by the rains of these months, yet the amount produced in most cases was very remarkable. As an instance, I would mention a case related to me by a near neighbor, Deacon Woodward, of forty-four ripe and twenty unripe pumpkins being grown, in his garden, upon the vine of one seed!

Another fact worthy of note was observed in the second flowering of several species of plants, as stated in the calendar, and the appearance of grasshoppers so late in the season as the 13th of November. Not having seen these myself, I am unable to say anything of the species, neither am I sure that this fact will be deemed uncommon by naturalists. The *Cantharis cinerea* appeared in the latter part of June in great numbers. They had been noticed here the two years previous. This year, in many gardens, they completely stripped the potatoe vines of their foliage. No particular injury, however, appeared to arise from this. They also seemed to take much pleasure in feeding upon white clover, which they destroyed in a short time. Their progress was from north to south. They were in such numbers, that a half-bushel of them could have been gathered in a short time with the appropriate means. The chinck-bug, *Lygæus leucopterus* of Say, which made its appearance in some of the northern counties of Illinois, and was thought to have done great injury to the wheat crop, did not make its appearance, that I am aware of, in this State.*

There have been during the year several heavy storms accompanied with lightning, the most remarkable of which occurred on the 26th of April.

The atmosphere here is remarkably transparent, so much so, that the stars have an unwonted brilliancy, and seem much nearer to you than in the northern portions of New England.

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* If any naturalist wishes specimens of this insect, I shall take pleasure in furnishing them.

Another fact observed during the past year, is that of the "rotation" of the wind. The law of rotation, noticed by Dr. Dalton, and more fully developed by Redfield and Dove, that the winds have a rotation from the north to the north-east, then east, south-east, and so through the points of the compass round to the north again, was sustained, with few exceptions. The number of circuits which have been made in this manner during the year, I am unable to state. Not thinking of this law of "rotation" of winds, until reminded of it by the fact here observed, proper care with respect to this point was not had in the observations. In the absence of mountains to act as disturbing local causes, we may have here an opportunity of establishing or verifying this law in this country. Our strongest winds are those from the south-west; next to this the west and north-west. The wind very seldom blows for any length of time from the north-east or east.

FLORAL CALENDAR, &c.

February 3d, The coldest day of the year. The average of the observations of the Thermometer for the day being $-3°.50$. At 4 o'clock, A. M., it stood at $-24°$.

March 22d, Star of Bethlehem, Crocus and Snow-drop just coming up.

April 1st, Tulips and Crown Imperial up.—4th, Soil in gardens sufficiently dry for working.—10th, Hepatica Triloba and Ranunculus Fascicularis in blossom.—15th, Pasque flower.

May 1st, Dutchman's Breeches, Squirrel Corn, Adder's Tongue, Sanguinaria.—5th, Grapes begin to bloom.—11th, Geum Vernum in flower.—14th, Missouri Currant.—17th, Apple, Plum and Cherry.—20th, Flowering Almond.—22d, Tulips.—25th, Dodecatheon Media.

June 5th, Common Syringa in blossom, Hypoxis Erecta.—7th, Double Larkspur, Sweet William, Peonia.—12th, Green Peas plenty.—14th, Garland Syringa in blossom; Strawberries ripe.—17th, Chinese Peonia and all kinds of Roses in blossom.—18th, Eschcholtzia in flower.

July 1st, Currants ripe.—5th, Raspberries ripe.—10th, Wheat harvest commences.—22d, Gooseberries ripe.—25th, Dahlias and Gladiolus in flower.—27th, Harvest Apple ripe.—25th and 27th, The hottest days of the year; the Thermometer on each of these days averaging 82°; at 3o'clock, P.M., the Thermometer stood at 92°.

August 5th, Blackberries ripe.—7th, Tiger flower in blossom.—10th, Pine-Apple Melons ripe.—15th, Water Melons ripe.—19th, Garland Syringa, Philadelphus Grandiflorus, in flower the second time.—25th, Snow-ball, Virburnum Opulus, in flower the second time; Green-gage ripe.

September 2d, Wild Plums ripe.—8th, Corn ripe, and fit for harvesting.—20th, Isabella Grape ripe.—28th, Frost for the first time; Virburnum Opulus in flower through this month.

October 7th, Dahlias and Tomatoes injured by the frost for the first time;. Virburnum Opulus in bloom up to this date.

November 16th, First snow.—22d, Ranunculus Fascicularis in blossom the second time, and continued in bloom through this month.

December 13th, The Thermometer at sunrise stood −4°, the only time during the month that it was below zero.

METEOROLOGICAL OBSERVATIONS

Made at Emerald Grove, Rock County, Wisconsin, for the Year 1851. Latitude 42° 39' N. Longitude 88° 54' W. Elevation above Lake Michigan, 408 feet; above the Atlantic Ocean, 986 feet. By Orrin Densmore.

		January.	February.	March.	April.	May.	June.	July.	August.	Septemb.	October.	Novemb.	Decemb.	Year.
Thermometer.	Sun rise...	19.42	23.39	23.32	34.93	46.19	55.46	61.58	58.45	57.73	41.93	29.20	14.84	35.93
	9 A. M.....	23.68	28.42	40.06	45.30	57.16	65.63	73.87	68.71	67.20	48.55	32.66	18.06	47.42
	3 P. M.....	28.61	33.28	46.64	50.53	66.39	70.66	78.71	75.09	72.25	56.77	35.87	23.77	53.21
	9 P. M.....	22.16	26.67	33.45	39.40	51.77	58.73	65.16	61.74	61.33	45.03	30.90	17.93	42.85
	Mean.....	23.48	27.91	37.87	42.55	55.38	62.63	69.80	66.07	64.63	48.07	32.16	18.65	45.76
	Maximum..	51	48	70	72	83	87	92	85	92	73	54	54	92
	Minimum..	−20	−1	6	24	23	44	47	49	34	20	16	−17	−20
Clearness of Sky. In decimals.	Sun rise...	355	410	484	5.26	309	377	380	432	513	393	393	348	418
	9 A. M.....	358	385	570	4.50	355	383	451	480	457	335	306	390	410
	3 P. M.....	332	353	500	410	342	310	451	432	463	467	247	349	388
	9 P. M.....	400	314	707	516	422	423	600	645	663	597	230	426	495
	Mean.....	361	365	555	475	357	373	470	497	524	448	294	378	425
Days entirely clear		1	1	2	2	1	0	0	1	0	0	0	0	8
Entirely cloudy..		8	7	1	5	5	4	2	2	2	2	10	6	54
Direction of Wind. (No. of Observations.)	From the N.	7	13	13	24	6	5	10	20	10	3	11	12	134
	" S.	16	24	16	9	33	13	11	13	33	32	10	12	213
	" E.	7	6	13	12	14	26	14	26	10	6	8	2	144
	" W.	31	12	17	21	5	17	14	15	6	9	30	24	201
	" N. E.	9	5	10	12	13	2	5	3	10	3	4	6	82
	" S. E.	10	10	8	9	15	3	11	14	5	8	12	7	112
	" N. W.	18	22	15	18	13	18	11	7	12	30	34	35	233
	" S. W.	21	18	24	12	19	23	30	18	26	27	9	25	252
	Calm.....	5	2	8	3	6	13	17	8	8	6	2	1	79

METEOROLOGICAL OBSERVATIONS

Made at Emerald Grove, Rock County, Wisconsin, for the Year 1850. Latitude 42° 39′ N. Longitude 88° 54′ W. Elevation above Lake Michigan, 408 feet; above the Atlantic Ocean, 986 feet. By Orrin Densmore.

		January.	February.	March.	April.	May.	June.	July.	August.	Septemb.	October.	Novemb.	Decemb.	Year.
Thermometer.	Sun rise...	20.97	19.07	29.09	33.77	41.45	58.53	63.77	61.74	51.03	40.61	33.63	16.35	39.17
	9 A. M.....	23.61	24.53	31.58	42.90	55.22	74.96	76.45	76.97	60.70	48.48	39.36	18.83	47.79
	3 P. M.....	27.98	35.25	37.87	47.89	65.48	80.00	83.61	78.70	66.83	55.61	45.63	24.19	54.08
	9 P. M.....	22.48	24.32	29.84	36.23	48.89	63.56	67.77	65.64	54.56	43.90	35.93	17.93	42.58
	Mean.....	23.75	26.06	30.75	40.13	52.67	69.30	72.84	70.76	58.28	47.23	38.63	19.66	45.90
	Maximum.	41	54	61	73	87	89	95	90	82	77	61	47	95
	Minimum..	−13	−14	10	18	30	36	46	48	35	24	16	−2	−14
Clearn. of Sky. In decimals.	Sun rise...	232	528	416	410	677	426	522	558	526	567	386	276	460
	9 A. M.....	197	546	477	430	687	500	425	442	546	629	446	258	465
	3 P. M.....	336	618	419	366	532	480	493	519	463	525	373	306	453
	9 P. M.....	328	560	413	550	725	556	661	529	597	716	496	377	542
	Mean.....	273	563	431	439	655	492	525	512	533	609	425	305	480
Days entirely clear		0	3	0	1	1	1	0	0	0	3	1	1	11
Entirely cloudy..		6	3	4	6	1	1	0	5	2	1	7	5	41
Direction of Wind. (No. of Observations.)	From the N.	12	13	22	7	10	7	8	17	5	3	4	30	138
	" S.	15	16	16	15	9	32	30	13	19	22	7	13	207
	" E.	17	9	20	17	16	10	8	18	9	6	13	5	148
	" W.	14	12	28	15	18	6	9	6	14	10	20	19	171
	" N. E.	2	7	7	13	5	3	4	12	10	0	5	10	78
	" S. E.	19	13	3	9	22	11	10	20	18	16	13	6	160
	" N. W.	22	24	18	21	31	11	8	17	7	31	21	18	229
	" S. W.	19	14	8	18	8	28	33	10	26	31	30	21	246
	Calm.....	4	4	2	4	5	*8	14	11	*8	†4	4	2	70

* Four Observations in June and four in September not taken.

† One Observation in October not taken.

METEOROLOGICAL OBSERVATIONS

Made at Fort Howard, Green Bay, Wisconsin, for the Year 1851. Latitude 44° 40′ N. Longitude 10° 10′ W. of Washington. Elevation above Lake Michigan, 15 feet; above the Atlantic Ocean, 593 feet. By H. Gruby, U. S. A. [Calculated for the Wisconsin State Agricultural Society, by Albert C. Ingham, Madison, Wisconsin.]

		January.	February.	March.	April.	May.	June.	July.	August.	Septemb.	October.	Novemb.	Decemb.	Year.
Thermometer.	Sun rise	17.06	21.00	26.67	32.26	41.80	52.70	58.96	55.25	55.16	38.85	27.60	14.32	36.80
	9 A. M.	18.74	23.50	32.87	40.80	50.25	64.80	69.48	65.83	63.00	45.80	30.86	16.41	43.50
	3 P. M.	25.09	30.28	42.06	17.80	58.96	70.73	75.38	73.38	69.26	54.45	35.53	22.51	51.29
	9 P. M.	19.70	24.78	32.29	39.00	49.77	60.83	65.48	63.77	57.23	45.33	30.40	17.80	42.19
	Mean	21.07	25.64	34.36	40.03	50.38	61.71	67.17	64.31	62.21	46.65	31.56	18.41	44.04
	Maximum	41	47	61	77	79	85	89	85	87	72	56	48	89
	Minimum	−19	−7	4	20	22	40	45	38	31	20	15	−11	−19
Clearness of Sky* In decimals.	Sun rise	3.32	2.82	5.12	4.25	3.74	5.00	4.09	3.77	3.26	3.35	2.30	3.25	3.69
	9 A. M.	3.22	2.39	4.16	4.23	3.09	4.90	4.90	4.77	3.13	3.45	1.80	3.41	3.62
	3 P. M.	3.38	3.10	4.83	5.16	3.36	3.36	4.16	3.71	4.23	3.58	2.23	4.03	3.76
	9 P. M.	3.12	2.71	6.36	4.10	4.87	5.16	4.70	5.35	5.90	3.80	2.33	4.83	4.44
	Mean	3.26	2.75	5.12	4.43	3.76	4.60	4.46	4.40	4.13	3.54	2.16	3.95	3.88
Days entirely clear		3	1	1	3	1	1	0	0	0	0	1	2	13
Entirely cloudy		11	11	1	3	7	1	3	4	4	3	11	8	67
Direction of Wind. (No. of Observations.)	From the N.	12	11	25	30	19	8	18	11	17	17	29	9	2.06
	" S.	17	25	31	16	29	28	12	7	33	31	13	19	2.61
	" E.	4	5	2	10	15	7	5	6	15	0	7	1	77
	" W.	25	16	14	16	19	23	24	32	8	23	24	30	2.55
	" N. E.	10	5	5	17	12	4	8	6	4	3	5	7	86
	" S. E.	0	1	3	6	2	7	3	2	7	1	1	0	33
	" N. W.	6	9	14	5	7	0	9	4	1	1	4	9	69
	" S. W.	38	34	16	7	5	9	12	7	4	11	5	21	1.68
	Calm	12	6	14	13	16	34	33	49	31	37	32	28	3.05
Rain & Melted Snow		1.12	1.50	78	1.58	8.50	3.15	5.07	2.67	3.26	1.10	2.26	28	31.27

* Entire Clearness being 10.

METEOROLOGICAL OBSERVATIONS

Made at Fort Howard, Green Bay, Wisconsin, for the Year 1850. Latitude 44° 40′ N. Longitude 10° 10′ W. of Washington. Elevation above Lake Michigan, 15 feet; above the Atlantic Ocean, 593 feet. By H. Gruby, U. S. A. [Calculated for the Wisconsin State Agricultural Society, by Albert C. Ingham, Madison, Wisconsin.]

		January.	February.	March.	April.	May.	June.	July.	August.	Septemb.	October.	Novemb.	Decemb.	Year.
Thermometer.	Sun rise	18.35	16.39	22.32	32.13	38.22	54.40	61.19	59.81	48.63	39.64	30.26	14.41	36.31
	9 A. M.	21.29	24.53	29.90	38.40	53.30	70.26	74.58	71.19	56.56	46.25	33.10	16.09	44.62
	3 P. M.	27.00	31.89	36.25	45.33	62.25	76.76	78.22	75.42	65.03	57.35	41.86	23.25	51.72
	9 P. M.	19.25	23.14	27.24	35.33	47.36	66.60	68.64	66.70	55.03	46.09	33.53	17.61	42.22
	Mean	23.00	24.38	32.45	38.33	43.41	65.50	69.10	67.61	56.83	48.49	36.06	18.83	43.66
	Maximum	47.00	48.00	50.00	74.00	78.00	88.00	89.00	83.00	77.00	73.00	64.00	38.00	89.00
	Minimum	-11.00	-14 00	2.00	11.00	30.00	30.00	49.00	45.00	41.00	23.00	8.00	-8.00	-14.00
Clearness of Sky* In decimals.	Sun rise	1.93	5.78	4.00	4.53	5.96	3.93	2.90	3.61	3.93	4.64	2.73	2.54	3.95
	9 A. M.	2.54	5.85	4.51	4.20	6.83	5.50	4.54	3.87	4.46	4.90	3.30	2.51	4.41
	3 P. M.	3.51	4.75	3.90	4.96	4.61	5.50	3.70	5.90	3.40	5.00	3.73	2.54	4.25
	9 P. M.	3.83	6.21	4.32	6.13	5.35	5.76	3.41	5.30	3.83	6.38	4.40	2.93	4.57
	Mean	2.95	5.64	4.18	4.95	5.68	5.17	3.64	4.67	3.90	5.23	3.54	2.63	4.34
Days entirely clear		1	9	2	3	2	2	0	1	2	4	3	0	29
Entirely cloudy		9	4	5	2	0	1	2	3	2	4	10	9	51
Direction of Wind. (No. of Observations.)	From the N.	6	16	3	22	12	9	3	9	5	3	9	18	1.15
	" S.	6	15	11	17	19	20	8	6	10	19	36	19	1.86
	" E.	17	2	9	17	23	16	11	6	9	3	8	7	1.38
	" W.	30	33	30	23	16	11	30	19	39	34	23	42	3.30
	" N. E.	7	2	31	15	15	8	11	14	7	4	7	4	1.25
	" S. E.	10	14	4	6	8	9	5	9	3	4	0	2	74
	" N. W.	7	8	10	8	7	3	7	9	2	6	2	13	72
	" S. W.	12	6	11	3	14	20	22	33	19	29	17	6	1.92
	Calm	29	16	15	9	10	24	27	19	26	22	18	13	2.28
Rain & Melted Snow		-----	-----	-----	-----	-----	4.14	6.34	6.91	2.69	1.10	2.59	95	24.75

* Entire Clearness being 10.

METEOROLOGICAL OBSERVATIONS FOR 1851.

Made at Kenosha, Wisconsin. Latitude 43° 35′ N. Longitude 87° 50′ W. Elevation above Lake Michigan, 35 feet. By John Gridley.

MONTH.	TEMPERATURE.							WINDS.	WEATHER.
	Sun rise.	9 A. M.	3 P. M.	9 P. M.	Mean.	Maxim.	Minim.	Prevailing.	
*January....	24.33	26.37	31.93	25.58	27.05	48	−16	W. & N.W.	
February...	22.75	27.10	30.89	28.42	24.29	46	05	S.W. & S.	
March.....	29.03	35.09	39.67	33.58	34.34	62	06	W. & N.E.	
April.....	33.83	41.70	43.86	37.93	39.33	66	21	N.E. & W.	Fair....132 days.
† May.....	24.75	37.50	43.00	37.75	35.75	52	23	W. & N.E.	Clowdy.154 "
† June.....	61.35	63.00	60.00	61.42	61.56	80	49	E. & W.	Rainy....65 "
July	63.93	69.58	70.22	64.96	67.11	90	54	W. & N.E.	Snowy...14 "
August....	64.90	68.22	64.90	63.87	65.47	84	54	N.E. & E.	
September.	59.80	67.23	69.06	63.63	64.93	87	38	N.E. & S.E.	
October....	43.13	50.12	52.87	47.54	48.41	70	24	W. & S.E.	
November..	32.46	35.60	37.80	33.90	34.94	49	19	W. & N.W.	
‡ December..	23.07	25.53	27.40	25.86	25.46	56	−10	N.W. & W.	
Mean.....	-----	-----	-----	-----	44.45	-----	-----	----------	----------

* January 17 and 18. Thermometer ranged from 4° to 10° below zero.
January 29th, 30th and 31st. Thermometer ranged from 2° to 16° below zero.

† Only five days observation in May, and 17 days in June.

‡ December 15th, 16th, 17th and 18th. Thermometer ranged from 1° to 10° below zero.

Range of Barometer, during the last six months of the year, from 28.680 to 30.709.

METEOROLOGICAL OBSERVATIONS FOR 1850.

Made at Kenosha, Wisconsin. Latitude 43° 35′ N. Longitude 87° 50′ W. Elevation above Lake Michigan, 35 feet. By John Gridley.

MONTH.	TEMPERATURE.							WINDS.	WEATHER.
	Sun rise.	9 A.M.	3 A.M.	9 P.M.	Mean.	Maxim.	Minim.	Prevailing.	
January	26.63	29.16	32.74	27.45	28.99	44	-4	W.	
February	25.98	29.85	35.60	28.33	30.44	56	-10	W.	
March	26.29	31.42	34.64	30.25	30.65	52	10	W. & N.W.	
April	31.70	38.30	37.30	38.46	35.69	54	13	W. & N.E.	Fair....143 days.
May	37.13	50.32	51.67	44.13	45.81	78	26	W & N.E.	Cloudy..149 "
June	59.96	65.90	67.06	60.36	61.57	80	38	W. & S.W.	Rainy....63 "
July	61.03	72.22	75.51	68.70	69.36	84	56	W. & N.E.	Snowy...10 "
August	59.09	69.80	71.61	65.03	66.38	82	46	W. & N.E.	
September	48.03	58.60	61.66	54.23	55.63	76	38	W. & S.W.	
October	39.19	50.03	51.48	44.45	46.29	68	24	W. & S.W.	
November	32.66	37.06	42.76	36.16	37.16	58	14	W. & S.W.	
December	16.87	20.49	26.25	21.22	21.21	40	0	W. & N.W.	
Mean	.....	.....	.....	.....	44.29	.....	.....	.....	.....

METEOROLOGICAL OBSERVATIONS

Made at Summit, Waukesha County, Wisconsin, for the Year 1851. Latitude 43° 05′ N. Longitude 88° 30′ W. Elevation above Lake Michigan, about 300 feet. By Edward W. Spencer. [Calculated and furnished to the Wisconsin State Agricultural Society, by I. A. Lapham, of Milwaukee.]

		January.	February.	March.	April.	May.	June.	July.	August.	Septemb.	October.	Novemb.	Decemb.	Year.
Thermometer.	Sun rise	19.90	24.04	25.29	33.73	45.20	54.00	62.55	57.97	57.57	41.29	30.00	16.03	38.96
	2 P. M.	27.74	31.21	40.16	49.40	61.81	68.67	75.00	71.81	70.23	54.20	35.53	23.94	50.83
	Sun set	25.07	29.43	34.81	44.21	54.61	62.40	68.10	65.58	64.80	50.19	33.60	21.42	46.19
	Mean	24.24	28.23	33.42	42.45	53.87	61.69	68.55	65.12	64.20	48.56	33.04	20.46	45.32
	Maximum	42	44	72	70	78	80	87	82	86	71	54	50	87
	Minimum	−16	0	4	26	26	38	44	48	33	22	16	−13	−16
Clearn. of Sky.	Sun rise	355	268	677	457	297	570	500	581	483	439	333	323	440
	2 P. M.	387	429	574	407	369	357	374	451	500	483	300	371	417
	Sun set	339	286	600	470	339	360	358	564	587	516	250	355	419
	Mean	360	328	617	445	350	429	411	532	523	479	294	340	425
Cloudy days		17	15	9	17	11	11	8	12	9	16	17	15	157
Fair days		12	10	21	11	8	6	5	12	12	14	8	12	131
Rainy days		1	2	1	2	11	6	7	8	8	1	2	1	50
Direction of Wind.	From the N.	5	2	7	9	3	4	5	2	4	3	8	6	58
	" S.	9	15	8	3	6	1	9	4	17	9	3	10	94
	" E.	1	5	11	7	16	7	10	12	8	4	10	0	91
	" W.	25	7	12	10	5	6	7	5	2	15	18	26	139
	" N. E.	7	4	10	13	21	13	12	20	18	3	6	3	130
	" S. E.	10	15	12	15	16	10	8	12	6	10	4	8	126
	" N. W.	9	20	16	12	6	11	5	9	4	11	24	19	142
	" S. W.	24	14	16	15	16	27	24	20	18	22	15	16	227
	Calm	3	2	1	5	4	11	13	9	13	16	6	5	88

ABSTRACT OF METEOROLOGICAL OBSERVATIONS

Made at Aztalan, Jefferson County, Wisconsin, for the Year 1851. Latitude 43° 04′ N. Longitude 88° 52′ W. Elevation above Lake Michigan, 230 feet. By James C. Brayton.

	January.	February.	March.	April.	May.	June.	July.	August.	Septemb.	October.	Novemb.	Decemb.	Year.
Temperature.													
Highest	54	50	72	75	78	83	90	89	90	71	55	47	90
Lowest	−19	−1	7	26	26	34	53	42	32	23	15	−14	−19
Range	73	51	65	37	42	49	37	47	58	48	40	61	109
Mean	25.34	30.23	38.84	43.36	55.86	63.33	71.02	67.26	64.99	46.80	32.98	19.77	46.67
Rain (inches)	1.20	2.75	2.31	1.49	9.90	4.64	2.94	8.00	4.17	1.30	2.18	1.71	42.59
Clear Days	18	13	10	7	14	9	11	9	7	11	18	17	144
Cloudy	13	15	21	23	17	21	20	22	23	20	12	14	221
Prevailing Wind	N. W.	S.	N. W.	N. W.	S. & S. E.	S. W.	S. W.	S. W.	S. W.	N. W.	S. E.	S. W. & N. W.	S. W.

Plum and Apple blossomed May 20th.

METEOROLOGICAL OBSERVATIONS

Made at Green Lake, Marquette County, Wisconsin, for the Years 1850 and 1851. Latitude 43° 48′ N. Longitude 88° 56′ W. By F. C. Pomeroy.

	January.	February.	March.	April.	May.	June.	July.	August.	Septemb.	October.	Novemb.	Decemb.	Year.
1850.													
Mean Temperat.													
At Sun rise.....	22.5	21.	25.	35.	31.5	60.5	60.	62.	48.	40.	35.	15.5	38.00
At 2 P. M.....	31.5	34.	37.	46.	60.5	83.	80.	77.5	66.	59.	48.	25.	54.00
Mean.....	27.	22.5	31.	40.5	51.	71.7	70.	69.8	57.	49.5	41.5	20.2	46.00
*Clear days.....	13	10	16	13	5	3	6	3	13	10	10	23	125
No. of Storms...	10	3	3	3	2	4	7	0	1	2	3	0	38
1851.													
Mean Temperat.													
At Sun rise.....	20.	23.	30.	30.2	45.5	52.	60.	54.2	56.	41.	28.	21.5	38.46
At 2 P. M.....	28.	33.5	47.	52.	62.2	74.2	79.	75.8	73.	56.5	37.	27.2	53.79
Mean.....	24.	28.2	38.5	41.1	53.4	63.1	69.5	65.	64.5	48.8	32.5	24.4	46.12
*Clear days.....	9	9	15	14	10	11	17	15	11	15	4	11	141

Warmest day in 1850, July 26th, 93°. Coldest day, February 14th, -14. Prevailing Wind, South West.

Warmest days in 1851, 14th and 15th July, 92° at 2 P.M. Coldest day, January 30th, -20 at Sunrise; -6 at 2 P. M. Blue Birds and Robins first seen, March 13th.

* Clear days only noted—the remainder cloudy or variable.

APPENDIX.

FORMER AGRICULTURAL MOVEMENTS.

STATE AGRICULTURAL SOCIETY OF 1846.

The following Papers are the Minutes of what is believed to have been the First Association for the advancement of the interests of Agriculture ever formed in that Territory which now constitutes the State of Wisconsin. It was organized by Members of the First Constitutional Convention, and furnishes gratifying evidence of that desire for improvement which has characterized the history of Wisconsin from its earliest period. No record can be found of any meeting subsequent to the one held December 3d, A. D. 1846; and it is believed that this was the last. The movement was undoubtedly premature, and to this, and not to any lack of spirit, must its failure be ascribed.

PRELIMINARY MEETING.

TUESDAY, DECEMBER 1, 1846.

Pursuant to a call of several members of the Convention, and others, desirous of forming a "State Agricultural Society," for the future State of Wisconsin, the members of the Convention and other citizens of the Territory, assembled at the Convention Chamber, and proceeded to organize the Meeting by calling the Hon. WILLIAM R. SMITH, of Iowa County, to the Chair, and appointing LA FAYETTE KELLOGG, of Dane County, Secretary.

The object of the Meeting having been stated by the Chair, and after some remarks from several gentlemen of the Meeting, the following resolution was introduced by Mr. BURCHARD, and adopted by the Meeting, to wit:

RESOLVED—That a Committee of three be appointed by the Chair to obtain some suitable person to address the members of the Convention, upon the subject of organizing a State Agricultural Society.

The Chair appointed Messrs. Burchard, Berry, and Kellogg, such Committee.

The Hon. Warren Chase having been called upon, rose and addressed the Meeting in some very appropriate remarks upon the subject of Agriculture and Agricultural Societies, and the organization, customs, &c., of the Wisconsin Phalanx.

Mr. Parsons introduced the following resolution, which was unanimously adopted, to wit:

Resolved—That the thanks of this Meeting be presented to Mr. Warren Chase, for the interesting history of the system, theory, and practice of the Wisconsin Phalanx; and also to Mr. Parkinson for his interesting description of the Oregon Territory.

On motion of Mr. Berry, the Meeting adjourned until next Thursday Evening.

ORGANIZATION.

Thursday, December 3, 1846.

The Meeting was called to order by the Chairman, when Mr. Burchard, from the Committee appointed to obtain some suitable person to deliver an Address, reported that Mr. Griswold, of Dane, would address the Meeting this evening.

Mr. Burchard moved that a Committee of five be appointed to prepare a Constitution for the Agricultural Society proposed to be formed for the future State of Wisconsin.

Which was agreed to.

The Chair appointed Messrs. Burchard, Gilmore, Beall, Meeker and Boyd, the said Committee.

Mr. Griswold having been introduced to the Meeting, delivered a very neat and appropriate Address on the subject of the formation of the Society.

Mr. Burchard, from the Committee appointed to draft a Constitution for the Society, reported the following Constitution—(*See* Constitution.)

On motion of Mr. Doty, the Constitution was taken up and unanimously adopted.

The Meeting was then addressed by Messrs. Burchard, Elmore, Randall, Noggle, Strong, of Racine, Crawford, and Tweedy, in some interesting remarks upon the subject of Agriculture in general.

Mr. Burt introduced the following resolution, which was unanimously adopted, to wit:

Resolved—That the thanks of this Meeting be given to Joseph Griswold, for the elegant and highly interesting discourse delivered on this occasion; and that he be requested to furnish the Secretary with a copy thereof, to be printed with the proceedings of this Meeting.

On motion of Mr. Meeker, the meeting adjourned until next Monday Evening, at 7 o'clock.

CONSTITUTION.

ARTICLE I.

This Society shall be called the "Wisconsin State Agricultural Society," for the advancement of Agriculture, Horticulture, and the Domestic Arts.

ARTICLE II.

Any person may become a member of this Society by paying into its treasury one dollar on admission, and one dollar annually thereafter, during his continuance as a member. Any person paying ten dollars on admission, may become a life member.

ARTICLE III.

The Officers of this Society shall be a President, three Vice-Presidents, Corresponding Secretary, Recording Secretary, Treasurer, one Manager from each county, who shall, together, constitute the Executive Committee. They shall be elected annually by a majority of votes present, and shall have power to fill vacancies in their own body.

ARTICLE IV.

It shall be the duty of the President to preside at all meetings of the Society, and of the Executive Committee; or in his absence, either of the Vice-Presidents; and to call special meetings of the Executive Committee when deemed necessary.

ARTICLE V.

The Executive Committee shall appoint local Committees in the several counties, whose duty it shall be to examine farms and crops which may be offered for premiums; to obtain members, collect fees, and perform all necessary labors connected with the operations of the Society in their respective towns.

ARTICLE VI.

It shall be the duty of the Executive Committee to exercise a general supervision of the affairs of the Society; to appropriate the funds of the same in such manner as shall best subserve the interests, and forward the objects of the Society; to offer premiums, and to appoint Committees to award them; and to distribute all seeds, plants, books, &c., received for the Society, and to make their Annual Report at the Annual Meeting.

ARTICLE VII.

The Executive Committee shall determine the time and place, and make the necessary preparations for an Annual Fair, and give sufficient previous notice of the Premiums to be awarded thereat, and shall establish such By-Laws to regulate the deposit of Premiums as they shall deem proper.

ARTICLE VIII.

All competitors for Premiums must be members of the Society.

ARTILCE IX.

This Constitution may be altered at any Annual Meeting, by a vote of two-thirds of the members present.

CHARLES BURCHARD. JOHN W. BOYD.
MOSES MEEKER. ASA KINNEY.
JAMES GILMORE. JAMES DUANE DOTY.
EDWARD H. JANSSEN. WILLIAM C. GREENE.
ANDREW E. ELMORE.

STATE AGRICULTURAL SOCIETY OF 1849.

MADISON, December 25th, 1851.

DEAR SIR—As we have now a State Agricultural Society in successful operation, the first yearly "Transactions" of which are about to be published, it may not be considered inappropriate to embody in that work the unsuccessful attempts in previous years to establish and put in operation a Society of this kind.

It is well known that at almost every session of our State Legislature, some *few* individuals, actuated by a laudable desire to do something to build up and encourage industrial pursuits, have succeeded in raising—not an excitement, for

that is a term expressing too much ardor in so meritorious a cause—but sufficient *feeling* has on several occasions been raised, to hold a Meeting, and perhaps adopt a Constitution and elect Officers under it.

Those Officers, with some honorable exceptions, have generally been men whose praiseworthy efforts ceased, and their enthusiasm died away with the adjournment of the primary meetings, and whose purse-strings were drawn too tight to allow them to give any practical aid to the Society, by the payment of the trifling amount necessary to constitute them *actual members*. Such, I am convinced from observation, has been the character of a majority of those to whom the affairs of the several Societies have been entrusted; and with such a head, it is unreasonable to suppose that the body could grow and thrive. With such men for a motive-power to any important enterprise, it must prove a failure, such has been the case with each and every attempt to organize and put in successful operation a State Agricultural Society in Wisconsin, until 1851. That effort has been eminently successful; and, under the circumstances, the Society may, with truth, be termed a prodigy.

. But I am digressing from the subject of this communication. Having been identified as Secretary with one of those abortive attempts to organize a State Agricultural Society, of which I have been speaking, I have prepared a synopsis of the proceedings of the primary meetings, accompanied by the Constitution and the Officers of the Society. The cause of its failure, I believe, I have truly set forth in my foregoing remarks; and I have only to add, that no meeting of the Executive Committee was ever held—and although a correspondence was opened with the respective members by the Secretary, no response was ever received. The consequence was, no fund was raised, no Fair held, and the Annual Meeting passed by unattended. Thus ended the "spasm" of 1849.

I have also prepared a list of all those who became *bona fide* members of that Society, which are also herewith submitted.

In justice to those gentlemen, I beg leave here to state, that the small fund raised by the payment of their initiation fee, after deducting some trifling expenses of printing, &c., has been passed over to the Treasury of the present prosperous Society.

With my best wishes for the triumphant success of the Society, of which you have the honor to be Secretary,

I remain, Sir,

Your most obedient Servant,

ROYAL BUCK.

To Albert C. Ingham, Esq.

Sec. of the Wis. State Agr. Society.

ASSEMBLY CHAMBER,

MADISON, WEDNESDAY EVENING, FEBRUARY 21ST, 1849.

At a meeting of the citizens of Madison, and the members of the Legislature, for the purpose of forming a State Agricultural Society, Hon. SAMUEL PRATT was called to the Chair, and ROYAL BUCK chosen Secretary. The object of the meeting having been stated by the Chair, Mr. LANSING introduced the following resolutions, which were adopted, to wit:

"RESOLVED—That in view of the great importance of Agriculture in the West, it is expedient to form a State Agricultural Society in Wisconsin.

"RESOLVED—That a Committee be appointed by the Chair, consisting of five, whose duty it shall be to report at the next meeting a Plan of Organization for the contemplated Society."

Mr. DAUGHERTY introduced the following resolution, which was adopted, to wit:

"RESOLVED—That a Committee of nine be appointed by the Chair to draft a Constitution and By-Laws for a State Agricultural Society, to be presented for adoption at a future meeting."

Mr. BURNS introduced the following resolution, which was adopted, to wit:

"RESOLVED—That a Committee of three be appointed by the Chair, to prepare an Address to the citizens of the State of Wisconsin, to be published with the Constitution."

Mr. HULL introduced the following resolution, which was adopted:

"RESOLVED—That some competent person be appointed by the Chair to deliver an Address to the Society."

The Chair announced the following Committees under the resolutions, to wit:

To prepare a Plan of Organization—Messrs. R. W. LANSING, PARKER WARREN, ENOCH CHASE, E. S. HAZARD, JOHN W. BOYD, and A. OGDEN.

To draft a Constitution and By-Laws—Messrs. JONATHAN DAUGHERTY, JOHN M. WELLS, D. M. PARKINSON, H. S. THORP, S. G. COLLEY, JOSEPH KERR, ASA KINNEY, A. BOTKIN, and —— PIERCE.

To prepare an Address for publication—Messrs. TIMOTHY BURNS, PARKER WARREN, and Judge PIKE.

To deliver an Address to the Society—WILLIAM HULL, Esq.

The meeting then adjourned to meet again on Wednesday Evening, February 28th.

SAMUEL PRATT, *Chairman.*

ROYAL BUCK, *Secretary.*

At the adjourned Evening no Chairman appeared, and the meeting was called to order by the Secretary, and Hon. HIRAM BARBER chosen Chairman *pro tem.* None of the Committee being prepared to report, the meeting was again adjourned to meet on the Evening of March 7th.

At this meeting a Constitution was reported, and after being discussed and amended, was referred to a select Committee of three, consisting of TIMOTHY BURNS, JOSEPH KERR, and ROYAL BUCK. And the meeting adjourned to meet again.

At the next meeting the Constitution was reported back from the Committee, with sundry amendments, which were concurred in, after which it was adopted.

The following is the Constitution of the Wisconsin State Agricultural Society as finally adopted, together with a correct list of the first Officers elected under it:

CONSTITUTION OF THE STATE AGRICULTURAL SOCIETY.

Whereas it appears to be expedient to form a State Agricultural Society for the promotion of all the objects and advantages connected with scientific and practical Agriculture; and whereas, we deem the formation of such a Society, a measure that would be highly beneficial alike to the farmer, the manufacturer, the mechanic, and to every class of our citizens; and, as the soil of Wisconsin is second to none in the North-West for all agricultural pursuits; and believing that the institution of such a Society would tend to a respectful rivalry in every branch of industry, we do, therefore, establish such Society, and adopt for its government, the following Constitution:

ARTICLE I.

This Society shall be known as "*The Wisconsin State Agricultural Society*," having for its object the dissemination of all useful knowledge, scientifically and practically applied to the art of Agriculture, and the best mode and means of promoting farming and all industrial pursuits.

ARTICLE II.

The Officers of this Society shall consist of a President, Vice-Presidents, a Treasurer, Secretary, and an Executive Committee of five—which number may be increased by a vote of the members at any time hereafter. All the Officers named in this article shall be elected for one year, or until the first annual meeting of the Society.

ARTICLE III.

It shall be the duty of the President, or in case of his absence, of one of the Vice-Presidents, to preside at all the meetings of the Society, to keep order, and to enforce all its rules and regulations; and the Vice-Presidents shall preside with and assist the President in all the business transactions of the Society.

ARTICLE IV.

The Treasurer shall safely keep all moneys and effects of the Society entrusted to him, and shall account for the same to the Executive Committee, at all times; and if desired by said Committee, he shall execute a bond, to be approved by them, for the faithful performance of his duty, and to refund all moneys, property, and effects, in his hands. He shall keep a regular and correct account current with the Society, and shall render an abstract thereof, to said Committee, on demand. He shall also attend all regular meetings of the Society, and its Annual Fairs.

ARTICLE V.

The Secretary shall keep a faithful record of all the proceedings of the Society, in a book to be furnished for that purpose; and shall receive and answer all communications to, and from the Society, and maintain a correspondence with the Auxiliary Societies; and shall also attend with his records and papers, all regular meetings of the Society, and the Annual Fairs.

ARTICLE VI.

The Executive Committee shall have power to make all necessary prudential rules and regulations for the government of the Society, in all its practical and beneficial operations; to designate Premiums to be awarded at the Fairs; to appoint County Committees, and other Committees necessary to carry out the objects of the Society; to make By-Laws for its regulation; and shall perform such other duties as usually belongs to such a Committee.

ARTICLE VII.

A State Fair shall be held annually, at such time and place as the President and Executive Committee shall determine; and they shall publish a notice thereof, accompanied by a list of Premiums to be awarded at, and the manner in which the Fair will be conducted.

ARTICLE VIII.

The annual meeting of the Society shall be held at the Capitol, in Madison, on the third Monday of January in each year, and every Officer shall attend such meeting; and the Officers of the Society shall be elected at such meeting, for the term of one year.

ARTICLE IX.

Any person may become a member of this Society by subscribing his name to this Constitution, or authorizing the Secretary to do so, and paying into the treasury the sum of fifty cents, which shall entitle him to a certificate of membership, signed by the Treasurer and countersigned by the Secretary. And in order to continue such membership, shall pay the sum required by this Constitution at each annual meeting of the Society. The funds thus raised, shall be appropriated for the promotion of the general objects of the Society.

ARTICLE X.

This Constitution and By-Laws of the Society, may be amended or altered at any regular meeting thereof.

ARTICLE XI.

County Societies may be formed, which may become auxiliary to the State Society, under such rules and regulations as shall be prescribed by the President and Executive Committee of the State Society.

The following is a correct list of the Officers elected:

President.

ERASTUS W. DRURY, of Fond du Lac.

Vice-Presidents.

J. F. WILLARD, of Rock County.
HIRAM BARBER, of Dodge.
GEORGE ESTERLY, of Walworth.
GEORGE ANDERSON, of Dane.
THEODORE SECOY, of Racine.
HIRAM CHAMPLIN, of Manitowoc.
JONATH. DAUGHERTY, of Fond du Lac.
JACOB D. MERRIT, of Grant.
PATRICK TOLAND, of Washington.
TIMOTHY BURNS, of Iowa.
WM. MCDOWELL, of Green.
ENOCH UNDERWOOD, of Milwaukee.
BENJAMIN L. GIBBS, of Sheboygan.
ELISHA EDGERTON, of Waukesha.
J. T. HAIGHT, of Jefferson.
JOHN W. BLACKSTONE, of La Fayette.
BENJ. F. HOLLENBECK, of Marquette.
JOHN P. ARNDT, of Brown.
MOODY MANN, of Calumet.
THOMPSON HAGEY, of Crawford.
COL. JEREMIAH DRAKE, of Columbia.
JOHN BUSH, of Portage.
JACOB WEED, of Winnebago.
B. L. PURDY, of Sauk.
JOSEPH BOWRON, of St. Croix, and
JOHN MCKENNEY, of Richland.

Secretary, ROYAL BUCK, of Madison.

Treasurer, ABRAM OGDEN, of Madison.

Executive Committee.

Hiram Barber, of Dodge. Robert Wasson, of Milwaukee.
Joseph Goodrich, of Rock. Timothy Burns, of Iowa.
John M. Wells, of Waukesha.

Names of those who became actual Members of the Society by the payment of an Initiation Fee:

Erastus H. Drury.	Samuel Noyse.
William H. Fox.	Joseph Bowron.
Robert Wasson, Jr.	Daniel M. Parkinson.
James Fisher.	W. M. Larrabee.
E. T. Gardner.	Charles Rickerson.
Asa Kinney.	Hiram Barber.
John W. Boyd.	H. W. Warner.
L. H. Page.	Beriah Brown.
Jonathan Daugherty.	Charles H. Larkin.
E. S. Hazard.	George Anderson.
Abram Ogden.	John F. Meade.
David Atwood.	J. D. Reymert.
Royal Buck.	D. H. Rockwell.
William Welch.	Paul Juneau.
Mark Miller.	Charles Kuehn.
Patrick Toland.	Satterlee Clark.
Josiah F. Willard.	John E. Holmes.
Samuel G. Colley.	Thomas Sugden.
Joseph Kerr.	Nicholas H. Tarjensen.
Samuel Pratt.	Increase A. Lapham.

The Committee to prepare an Address for publication, never performed that duty; and Mr. Hull, who was to deliver an Address to the Society, delegated his trust to R. W. Lansing, who made a bombastic attempt, which was received with groans, hisses, shouts, and like demonstrations, eminently calculated to render the whole operation a perfect farce—and which, as a *finale*, was sufficient to blight all prospects of the future success of the Society.

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